SOCIAL COGNITIVE FACTORS OF ACADEMIC AND LIFE SATISFACTION IN MEISTER HIGH SCHOOL STUDENTS IN SOUTH KOREA

by

MINWOOK LEE

(Under the Direction of Jay W. Rojewski)

ABSTRACT

This study is the first to test the validity of Lent's (2004) social cognitive model of well-being with a sample of Korean Meister high school students. The participants were 720 seniors who were majoring in mechanical engineering. Structural equation modeling was used to test the fit of the hypothesized models to the data. Findings of the current study generally supported and extended the utility and validity of the hypothesized model of well-being in a culturally different context. Life and academic satisfaction were associated with social cognitive variables and personality traits. The predictors accounted for 60.5% of the variance in academic satisfaction and for 50.5% of the variance in life satisfaction. Meister high school students' life satisfaction was predicted by personality traits, academic satisfaction, and goal progress. Academic satisfaction was predicted directly by goal progress, outcome expectations, and environmental supports. That is, Meister high school students were likely to report satisfaction with their academic experience when they received support from teachers, parents, and friends for pursuing and studying their majors, expected positive outcomes after graduation, and progressed toward their academic goals. Contrary to expectations, academic self-efficacy and personality traits did not explain significant unique variations in academic satisfaction. Cultural differences may

explain the lack of interaction among academic self-efficacy, personality traits, and academic satisfaction. In addition, the strongest direct effect of environmental support to academic satisfaction in the current study may be consistent with this unique cultural feature in which family and social obligations, relationships with others, and meeting social norms and expectations are primary sources of individual satisfaction.

INDEX WORDS: Academic and life satisfaction, Meister high school students, Korean vocational education, Social cognitive career theory, Social cognitive model of well-being, Well-being

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CHAPTER 1

INTRODUCTION

Rationale

Substantial investment in developing vocational high schools has contributed to long-standing, sustained economic development in Korea since the 1960s (Kim, 2004). Korean vocational high schools have focused on the manufacturing sector of the economy and were deemed prestigious until the 1980s. Vocational high schools in Korea educated students as skilled workers with appropriate occupational awareness and professional knowledge to make them able to adjust to changes in an industrial society (Lee, 2007). Thus, many graduates from vocational high schools became influential leaders in Korea, including previous presidents (Kim, 2004).

However, currently, most vocational high schools in Korea are in crisis. Historically, vocational high schools in Korea were focused on providing practical skills for work in factories and small- to medium-sized businesses. These high schools focused on preparing students for work in a particular occupation or industry, and thus, they offered job preparation rather than academic courses to students who preferred to learn practical skills. So, many Koreans perceive vocational education and vocational high schools as *dead-end* or *second tier education*, because the training is geared toward low-income occupations and sequence low academic achievement (Ihm, 1999; Lee, 2007). Koreans' perception of vocational education has contributed to the poor reputation of vocational schools and the low quality of vocational education in general.

To address these problems, the Korean Ministry of Education, Science and Technology opened *Meister* high schools in 2009 to provide specialized vocational training similar to job training schools in Germany. Meister high schools were designed to develop and improve the quality of vocational high schools, to foster skilled technicians, and to meet the progressive demands of continued growth in the manufacturing industry. Meister high school is a new type of vocational high school that promotes secondary vocational education nationwide in an effort to make Korea a manufacturing leader. In 2009, 21 Meister schools were designated, and a total of 3,600 excellent students were selected for technical education and apprenticeships to develop expertise in fields such as shipbuilding, mechanical engineering, semiconductors, and medical equipment. The Ministry also planned to increase the number of Meister high schools, while decreasing the number of other types of vocational high schools (The Ministry of Education, Science, and Technology, 2009).

While the introduction of the Meister school concept is promising, one of the most meaningful ways to address problems in vocational high schools in Korea might be to improve students' satisfaction. Student satisfaction has been found to have an impact on academic achievement, self-esteem, and school attachment (Samdal, Wold, & Bronis, 1999). In addition, students' social psychological adjustment to school is an important factor of achievement growth, school continuation, and postsecondary educational attainment (Kelly & Price, 2009).

Although there have been a number of studies on satisfaction among adults, little attention has been given to the satisfaction of children and adolescents, until recently (Hatami, Motamed, & Ashrafzadeh, 2010; Park & Huebner, 2005). In general, individuals with high life satisfaction have a tendency to have good physical and mental health, good interpersonal relationships, and educational and vocational success. People who have higher life satisfaction

may be more effective problem solvers and able to be more resistant to stressful life events (Park, 2005).

Moro-Egido and Panades (2010) suggested that life satisfaction among students is influenced by family ties, self-evaluation, academic satisfaction, and the impact of recent events. Students' life satisfaction is strongly correlated with average ratings of satisfaction with family, friends, school, living environment, and self and is also related to their academic achievement and mental health (Park, 2005). In addition, studies have indicated that there are cultural differences in the perceived levels and correlates of life satisfaction. For example, satisfaction with school contributes significantly to global life satisfaction for only Korean students, though satisfaction with family, self, and living environment contributes significantly to global life satisfaction in both U.S. and Korean students. Plus, satisfaction with the school domain was a particularly strong correlate among Korean students' life satisfaction but not U.S. students (Park & Huebner, 2005).

Satisfaction has been one of the main factors of well-being research, especially subjective well-being. Ryan and Deci (2001) indicated that well-being is a complex construct that concentrates on optimal experience and functioning. Well-being is concerns about daily interpersonal questions and intense logical study. Well-being research in Western society has mainly focused on two philosophical perspectives, subjective well-being (SWB) and psychological well-being (PWB). SWB refers to happiness as a state explained by the presence of positive affect, the absence of negative affect, and the overall evaluation of perceived quality of life. SWB consists of four distinct but related factors, such as life satisfaction, domain satisfaction, pleasant affect (moods and emotions), and unpleasant affect. On the other hand, PWB is concerned with meaning, purpose, and the actualization of human potential. In this view,

well-being is more than individuals' happiness and is focused on what individuals are thinking or doing rather than feeling (Sheu & Lent, 2009). PWB has six constructs: autonomy (a sense of self-determination); personal growth (a sense of continued growth and development as a person); self-acceptance (positive evaluations of oneself and one's past life); purpose in life (the belief that one's life is purposeful and meaningful); environmental mastery (the capacity to manage effectively one's life and surrounding world); and positive relationships with others (the possession of quality relationships with others) (Ryan & Deci, 2001).

In an effort to integrate SWB and PWB conceptual frameworks, Lent (2004) developed a social cognitive model of well-being that includes personality, contextual, and social-cognitive variables that are related to determine domain and life satisfaction. Domain-specific and overall life satisfaction are conceptualized as key indexes of SWB, while self-efficacy and goal properties are viewed as key aspects of PWB (Sheu & Lent, 2009). Lent's view of well-being is based on the principles of social cognitive career theory (SCCT), personality theories, and theories of well-being (Ojeda, Flores, & Navarro, 2011).

Therefore, a need exists for research that provides a more comprehensive understanding of students' well-being and improves intervention efforts that will promote their optimal development. Also, a general need exists for research that investigates social cognitive influences on students' well-being. In particular, the study of students' academic and life satisfaction in Korean Meister high schools using social cognitive factors can provide a comprehensive understanding of students' well-being and a variety of internal (e.g., self-efficacy and personality traits) and external factors (e.g., environmental supports) that influence their satisfaction. Also, this study can give some implications for the practice of counseling in vocational high schools in Korea.

Purpose Statement

The purpose of this study was to test Lent's (2004) social cognitive model of well-being with a sample of students who were enrolled in Korean Meister high schools. The social cognitive model of well-being formed the conceptual framework for this study. Lent's model states that domain-specific satisfaction—in this study academic satisfaction and overall life satisfaction—are determined by a combination of cognitive, behavioral, social, and personality variables. The social cognitive model of well-being explains domain-specific satisfaction, such as academic, family, or work, and overall life satisfaction by social-cognitive factors, such as self-efficacy and goals. Domain-specific and life satisfaction are affected by personal traits and goal progress. Goal progress and domain-specific satisfaction are also affected by self-efficacy, outcome expectations, and environmental supports (Lent, Singley, Sheu, Schmidt, & Schmidt, 2007). Lent's model includes environmental supports, self-efficacy, outcome expectations, goal progress, and personal traits to explain relationships with domain-specific satisfaction and life satisfaction. Environmental supports can be defined as aspects of an individual's environment and individuals' appraisals of their environment that facilitate career choice and development (Lent, Brown, & Hackett, 2000). Self-efficacy refers to "people's judgments of their capabilities to organize and execute courses of action required attaining designated types of performance" (Bandura, 1986, p. 391). Outcome expectations represent the perceived consequences of the performance of particular behaviors (Lent, Brown, & Hackett, 1994). Goals have been defined as "consciously articulated, personally relevant objectives" that lend a sense of purpose and direction to people's behavior (Elliot, Sheldon, & Church, 1997, p. 915). Personal traits include positive and negative affectivity that relate to job and life satisfaction (Lent & Brown, 2008). Academic satisfaction can be defined as a pleasurable or positive emotional state from the

assessment of one's academic experiences by using Locke's (1976) definition of job satisfaction, which is "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience" (p. 1300). Life satisfaction can be influenced by personality variables, satisfaction in one's central life domains, participation in valued life tasks, and progress at fulfilling personal goals (Lent, 2004).

Research Objectives

Based on Lent's (2004) social cognitive model of well-being, two research objectives were established.

1. Describe Meister high school students' academic and life satisfaction using the social cognitive factors in Lent's model.
2. Verify the social cognitive model of well-being using structural equation modeling (SEM):
    a. Test the measurement model using confirmatory factor analysis (CFA).
    b. Test the structural model using path analysis (PA).

In order to achieve these objectives, six sets of predictor variables were hypothesized that will each explore direct channels to Meister high school students' life satisfaction: (a) personality traits will predict academic self-efficacy expectations, environmental supports and resources, academic satisfaction, and life satisfaction of Korean Meister high school students in Korea, (b) environmental supports and resources will predict self-efficacy, goal progress, outcome expectations, and academic satisfaction of Meister high school students in Korea, (c) academic self-efficacy will predict outcome expectations, goal progress, and academic satisfaction of Meister high school students in Korea, (d) outcome expectations will predict goal progress and academic satisfaction of Meister high school students in Korea, (e) goal progress will predict

academic and life satisfaction of Meister high school students in Korea, and (f) academic satisfaction will predict life satisfaction of Meister high school students in Korea.

Theoretical Framework

The theoretical framework for the current study was the social cognitive model of well-being (Lent, 2004). The social cognitive model of well-being was developed based on the principle of social cognitive career theory (SCCT), social cognitive theory, personality theories, and theories of well-being. This model is an educational and vocational extension of the notion of well-being that was designed to complement the SCCT elements of interest, choice, and performance (Lent, Taveira, Sheu, & Singley, 2009). This social cognitive model of well-being is a framework that hypothesizes that personality, contextual, and social cognitive variables determine domain and life satisfaction. Lent's model explains the processes that support the acquisition and continuation of well-being under typical life conditions (Lent, 2004; Sheu & Lent, 2009).

The social cognitive model of well-being was proposed to clarify how SWB and PWB interconnect and function together in the processes of maintaining well-being. PWB processes suggest ways that people achieve and sustain SWB. For example, by deciding and moving toward personal goals, participating in valued activities, and interacting with those within their social support environment, people contribute to their own progress and sense of purpose, organize and make meaning of their lives, and are able to improve their own happiness (SWB). Lent's (2004) model also includes the primary factors of SWB, conceptualizing personality or affective variables, especially positive and negative affect, as precursors of life satisfaction (Lent & Brown, 2008).

Social cognitive theory was also adopted as a basic structure to explain the relationships between predictors and outcomes of well-being. This model highlights the idea of a human as an active agent that enhances or recovers his or her own well-being. For example, people drive themselves toward their own happiness through participating in various valued life activities that help to build their self-efficacy, making progress toward their meaningful goals, or seeking out environmental supports and resources (Sheu & Lent, 2009).

Lent (2004) hypothesized that overall life satisfaction is influenced by personality variables and satisfaction with and progress in particular life domains. Domain-specific satisfaction is affected by personality traits, goal-directed activity, self-efficacy, outcome expectations, and perceived environmental supports and resources. Lent's model predicts that goal progress is affected by self-efficacy, outcome expectation, and environmental supports. Self-efficacy is affected by environmental supports and personal traits. Outcome expectations are affected by self-efficacy and environmental supports. Finally, environmental supports could be affected by personal traits. Lent's model has been recognized for including and uniting cognitive, behavioral, social, personality, and affective variables to determine well-being (Ojeda et al., 2011). This social cognitive model of well-being is a view of well-being that is relatively dynamic and susceptible to counseling interventions. This model is mainly adapted to well-being in the context of school and work domains (Singley, Lent, & Sheu, 2010). Thus, Lent's (2004) model offers a comprehensive understanding of how social cognitive factors are interrelated to students' academic and life satisfaction at Meister high schools in Korea.

Importance of Study

One of the most important factors of students' well-being may be their own perceptions of the quality of their lives. In youth, life satisfaction is strongly correlated to satisfaction with

important domains of life, such as family, friends, school, living environment, and self. So, research on predictors and outcomes of students' life satisfaction has increased (Suldo, Shaffer, & Riley, 2008). However, because studies of life satisfaction among students from Asian cultures remain uncommon, research on contextual influences on students' development and former research on cultural differences among adults have raised questions about the generalization of life satisfaction results from Western cultures to non-Western countries (Park, 2005). In fact, collectivistic Asian cultures place a high value on filial piety, parental control, humility, harmony with others, and schooling rather than an individual's interests and personal feelings. Also, most Korean high school and college students think that doing well in school and acquiring higher education is more important than a good relationship with friends and family. This perception may be related to Korean cultural values, which highly stress education and academic achievement. Educational experiences also function as tools to link members of important social groups, such as family and friends. Therefore, the generalizability of results concerning the correlation, consequences, and development of well-being among Western students need to be thoroughly studied among students from different cultures (Park & Huebner, 2005).

Therefore, results of the current study can make several broad contributions. First of all, this study's results hold potentially useful implications for efforts to improve overall life satisfaction and particular life domains, such as academic satisfaction, in culturally diverse situations. Results can help Korean students, especially vocational high school students, make improvements to meaningful life goals that enrich their perspectives on academic and life satisfaction. In addition, the relationship between social support toward goal progress and academic satisfaction can suggest meaningful academic support-building strategies. For example,

for students who have little academic support, results might suggest that making and developing a support network could be a meaningful alternative to achieving academic goals and experiencing satisfaction with academics.

Second, research findings can give a perspective about the role of personal satisfaction in the Korean culture. Actually, although the pursuit of personal happiness is very important in Western culture, students in collectivist cultures, such as Korea, may think personal happiness is less important and stress the well-being of families or communities before individual happiness (Sheu & Lent, 2009). Thus, this study should clarify the definition of well-being in the historical Korean culture and offer implications for academic and life satisfaction.

Finally, Sheu and Lent (2009) mentioned that the cross-cultural applicability of the social cognitive model of well-being is an empirical question, because the model is still in an early stage of development, and few studies have been conducted with this model outside of the U.S. The model has mainly focused on White college students (Ojeda et al., 2011). Thus, this study can give empirical evidence of the cross-cultural and cross-national validity of this cognitive model. That is, this study can provide a perspective on the cultural context of Korean students' academic and life satisfaction.

CHAPTER 2

LITERATURE REVIEW

Concept of Well-being

Longing for happiness is regarded as a primary human drive. However, the positive perspective of well-being and mental health has only recently been stressed and measured by researchers (Park & Huebner, 2005). Ryan and Deci (2001) defined well-being as "a complex construct that concerns optimal experience and functioning" (p. 141). Researchers have found that the issue of well-being is not only complex but controversial. There has been considerable debate about what it means to have optimal experience and what constitutes a good life. Well-being constitutes one of several indicators of life quality and includes social support and adjustment, physical health status, and standard of living. Such a wide range of meaning may result from the multidisciplinary roots of the quality of life literature, which involves contributions from sociology, medicine, and psychology (Lent, 2004).

Hedonic and Subjective Well-being

Though there have been a number of ways to conceptualize and measure well-being, most research has been derived from two philosophical positions, the hedonic and the eudaimonic (Lent, 2004; Ryan & Deci, 2001). The hedonic view is mostly an empirically-based perspective, while the eudaimonic view is a theoretically-derived perspective (Lent, 2004).

The hedonic view of well-being has a long history. Ryan and Deci (2001) provided a comprehensive history of the hedonic perspective. They noted that Aristippus, a Greek philosopher from the fourth century B.C., taught that the goal of life is to maximize pleasure, and

that happiness is the entirety of individuals' hedonic moments. English philosopher, Hobbs, best known for his work in political philosophy, mentioned that happiness occurs as a result of the successful pursuit of individuals' appetites. DeSade, a French aristocrat, insisted that the pursuit of sensation and pleasure is the ultimate goal of life. Utilitarian philosophers believed that "it is through individuals' attempting to maximize pleasure and self-interest that the good society is built" (p. 144). To sum up, the main perspective of the hedonic perspective is that well-being consists of subjective happiness and concerns the experience of pleasure and, thus, is to maximize individual happiness. The focus of hedonic well-being is the experience of pleasant feelings and the valance of positive and negative affect in daily life (Lent, 2004).

Table 2.1

Components of Subjective Well-Being

		Level of Satisfaction	
Pleasant affect	Unpleasant affect	Global	Domain
Joy	Guilt and shame	Desire to change life	Work
Elation	Sadness	Satisfaction with current life	Family
Contentment	Anxiety and worry	-	Leisure
Pride	Anger	Satisfaction with past	Health
Affection	Stress	Satisfaction with future	Finances
Happiness	Depression	Significant others' views of one's life	Self
Ecstasy	Envy	-	One's group

Note. Adapted from "Subjective well-being: Three decades of progress" by E. Diener, E.M. Suh, R. E. Lucas, and H. L. Smith, 1999, *Psychological Bulletin, 125*, p. 277.

Although there have been many ways to evaluate the pleasure and pain continuum in human experience, most research within the hedonic tradition has given rise to the concept of subjective well-being (SWB; Lent, 2004; Ryan & Deci, 2001). Diener, Suh, Lucas, and Smith (1999) defined SWB as a broad concept of phenomena that includes individuals' emotional

responses, domain satisfaction, and global life satisfaction that consists of four distinct but related factors such as life satisfaction, domain satisfaction, pleasant affect (moods and emotions), and unpleasant affect (see Table 2.1). In addition, Diener et al. mentioned that social indicators alone do not define quality of life, because individuals react differently to the same environments. Rather, quality of life is determined as people evaluate their individual conditions based on their unique expectations, values, and previous experiences.

Table 2.2

Major Philosophical Positions and Definitions of Well-Being

Philosophical position	Major components	Type of well-being and related measures	Major proponents
Hedonic	Life satisfaction (or happiness) Positive affect (Absence of) negative affect	Subjective well-being Satisfaction with life scale PANAS	Diener, Watson, Clark, and Tellegen
Eudaimonic	Meaning Purpose Growth Self-actualization	Psychological well-being Self-acceptance Environmental master Positive relations with others Purpose in life Personal growth Autonomy	Ryff

Note. Adapted from "Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment" by R. W. Lent, 2004, *Journal of Counseling Psychology, 51,* p. 485.

In relation to measuring subjective well-being (life satisfaction and affective components), there has been a wide array of self-report assessments, although the Satisfaction With Life scale (SWLS) by Diener, Emmons, Larsen, and Griffin (1985) and the Positive and Negative Affect Schedule (PANAS) by Watson, Clark, and Tellegen (1988) have been the most popular assessments (see Table 2.2; Lent, 2004).

Eudaimonic and Psychological Well-being

The eudaimonic view was inspired by Aristotle and means that well-being is more than personal happiness. Rather, it is the quest to actualize human potential and realize individuals' true nature. Well-being from a eudaimonic perspective is what individuals are doing or thinking rather than how individuals are feeling (Lent, 2004). In the eudaimonic perspective, subjective happiness cannot be equated with well-being, so that well-being from a eudaimonic view may occur when individuals' life activities are most harmonious with deeply held values and are holistically and fully engaged (Ryan & Deci, 2001).

Ryff and Keyes (1995) described a eudaimonic-oriented model termed psychological well-being (PWB). PWB stresses optimal functioning and human flourishing and considers health more than an absence of disease and problems. PWB includes important aspects of positive functioning in terms of mental health, clinical, and life span development. So, PWB is a pursuit of perfection that represents the realization of individuals' true potential (Lent, 2004). PWB includes six distinct components of positive psychological functioning, including self-acceptance (positive evaluation of one's self and one's past life), autonomy (self-determination), personal growth (continued growth and development), purpose in life (belief that one's life is purposeful and meaningful), environmental mastery (capacity to manage effectively one's life and surrounding world), and positive relationships with others (possession of quality relationships with others). These six constructs define PWB theoretically and operationally, and they specify what promotes emotional and physical health (Ryan & Deci, 2001). For example, self-acceptance can be considered as a key characteristic of mental health, optimal functioning, and maturity, so that positive self-acceptance is a central feature of positive psychological functioning. Positive relationships with others, such as warm and trusting interpersonal

relationships, are considered key factors of mental health, and warm relationships with others are also viewed as criteria of maturity. Thus, these six constructs of PWB present a perspective of positive psychological functioning including mental health, clinical, and life span development (Ryff, 1989).

In relation to measuring psychological well-being, Ryff (1989) developed a multidimensional instrument to assess the six aspects of psychological well-being (see Table 2). She indicated that self-acceptance, environmental mastery, and purpose in life scales were strongly correlated with life satisfaction. Ryff and Keyes (1995) also reported good support for a six-factor model of psychological well-being and for a single higher-order well-being factor.

Social Cognitive Model of Well-being

The Concept of the Model

Psychological models of well-being can be classified into eudaimonic and hedonic approaches. The eudaimonic approach defines well-being in terms of meaning, purpose, and growth, while the hedonic approach defines well-being in terms of personal happiness and feelings (Ryan & Deci, 2001; Singley at al., 2010). Psychological well-being (PWB) is an example of the eudaimonic perspective and is composed of six components, such as self-acceptance, environmental mastery, positive relations with others, purpose in life, personal growth, and autonomy. An example of the hedonic perspective is the subjective well-being (SWB) construct, which includes major components, such as life satisfaction and positive and negative affect (Ryan & Deci, 2001).

For the purpose of extending the study of well-being to vocational and counseling psychology, Lent (2004) proposed a social cognitive model of well-being, unifying perspectives of the SWB and PWB in which cognitive (e.g., goals), behavioral (e.g., participation in valued

life tasks), social (e.g., support), and personality/affective variables (e.g., positive/negative affect) jointly determine domain-specific and global life satisfaction. Lent's model includes the factors of SWB, such as positive affect, negative affect, and life satisfaction, and some factors of PWB, including environmental support and goal progress, and considers the paths by which they may interrelate. Lent's model also hypothesized that people who are generally satisfied with their lives tend to be satisfied within specific life domains, and vice versa.

Lent's (2004) model also adapts Bandura's (1986) social cognitive theory as a basic structure for integrating cognitive, behavioral, and contextual determinants of domain and life satisfaction. Social cognitive theory states that self-efficacy, outcome expectations, coping skills and strategies, and environmental supports become important when individuals try to promote goal setting and productive involvement in valued life tasks. The model hypothesizes that social cognitive factors, such as self-efficacy and goals, may help to explain domain-specific (e.g., academic and work) and overall life satisfaction. In addition, this model hypothesizes that personality and affective traits and domain satisfaction may be affected by goal-directed behavior, self-efficacy, outcome expectations, and environmental supports and resources in a given life domain (Lent, 2004). However, Lent's model also has some assumptions that do not directly follow social cognitive theory. For example, Lent hypothesizes that goal-directed behavior may influence overall life satisfaction directly, as well as indirectly influence domain-specific satisfaction. Also, he assumed that personality and affective traits, such as positive and negative affect, may be related to perceptions of self-efficacy and environmental support. These features are not supported by social cognitive theory but are consistent with some well-being studies (e.g., Ilies & Judge, 2003) and are also considered necessary to combine personality and social cognitive views on well-being (Singley et al., 2010).

Lent's (2004) social cognitive model of well-being emphasizes that academic and life satisfaction relate in a variety of traits and cognitive, behavioral, and environmental variables. In this model, there are seven major factors including self-efficacy, personality traits, outcome expectations, environmental supports and resources, goal progress, domain-specific satisfaction, and life satisfaction (see Figure 2.1).

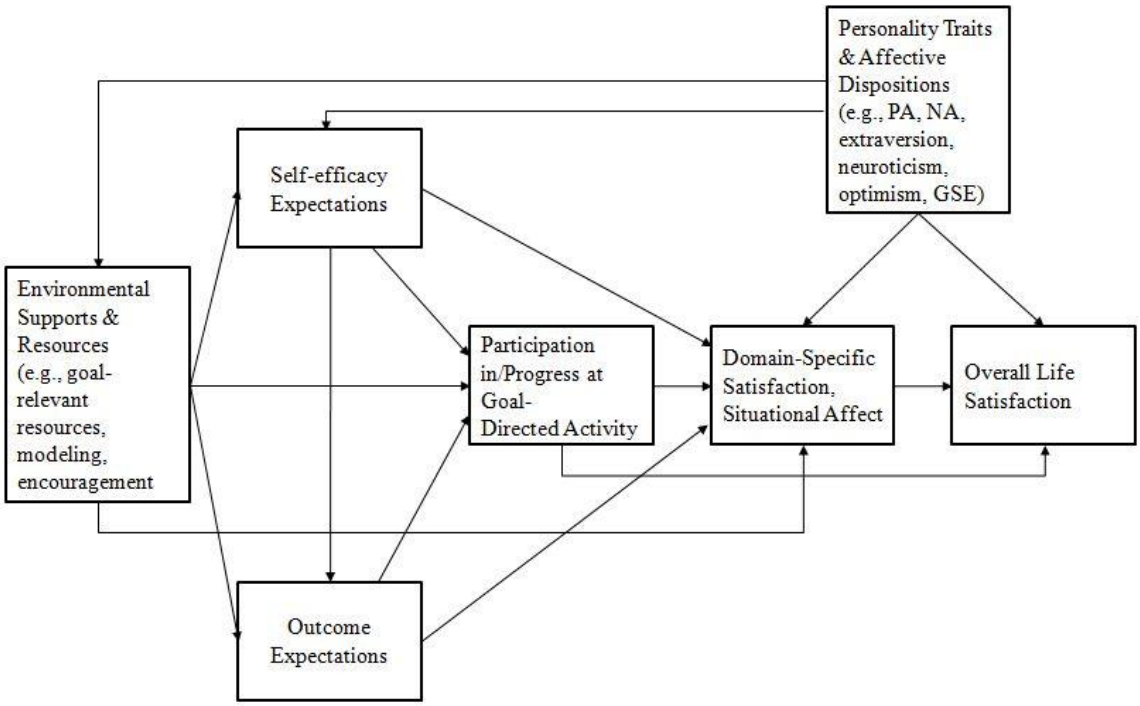

Figure 2.1. Proposed social cognitive model of well-being. From "Toward a Unifying Theoretical and Practical Perspective on Well-Being and Psychosocial Adjustment," by R. W. Lent, 2004, *Journal of Counseling Psychology, 51,* p. 500.

One of the major limitations of Lent's (2004) model is the use of cross-cultural applicability (Sheu & Lent, 2009). Because Lent's model is still in an early stage of development, studies on Lent's model have been conducted mainly in the U.S. There have only been six studies on this model outside of the U.S. (e.g., Badri, Mohaidat, Ferrandino, & Mourad, 2013; Lent et al., 2009; Lent, Nota, Soresi, Ginevra, & Duffy, 2011; Lent, Taveira, & Lobo, 2012; Ojeda et al., 2011; Verbruggen & Sels, 2010), and there have not been any published reports

related to Asian cultures. Asian countries with collectivistic or Confucian cultures may be very different from Western countries reflecting individualistic cultures. For example, personal happiness and personal satisfaction are very much individualistic pursuits in Western countries, but they may be more dependent on families or entire communities in Asian countries (Sheu & Lent, 2009). So, the causal paths and factors affecting domain-specific and life satisfaction could be very different based on culture. Therefore, it is likely that many cross-cultural studies will be needed for a cross-national validation of Lent's model.

Lent (2004) intended for the social cognitive model of well-being to extend the literature on positive psychological and vocational adjustment. One of the main strengths of the model is the integration of the two main perspectives of well-being, the hedonic and eudaimonic perspectives and to assume paths through which personality traits and social, cognitive, and behavioral variables interact with each other for domain-specific and overall life satisfaction. Lent's model also gives a perspective of well-being as relatively dynamic and susceptible to counseling and interventions. This view has been subsequently adapted to well-being in the context of school and work domains (Lent & Brown, 2006a, 2008; Singley et al., 2010). For these reasons, selecting this model for explaining students' satisfaction in Korean educational settings seems appropriate.

In order to infer possible outcomes from a future study of Meister high school students in Korea, it is meaningful to summarize previous studies of Lent's (2004) model. Lent et al. (2005) conducted two cross-sectional studies using two different measurement approaches. Study 1 showed that satisfaction in particular life domains was predicted by social cognitive variables, such as self-efficacy, perceived goal progress, and environmental resources (e.g., goal relevant resources, modeling, and encouragement). Domain-specific satisfaction also explained unique

variance in overall life satisfaction, even after controlling for positive affect and extraversion. However, contrary to expectation, outcome expectations did not significantly predict goal progress and domain-specific satisfaction.

Also, though Study 2 supported a reasonable data-model fit, findings were a little different. Students identified their own life domains and selected their own goals when they responded to a set of measures that assessed social cognitive variables without outcome expectations. Goal progress strongly predicted satisfaction in both life domains, and self-efficacy mainly predicted domain satisfaction through its link to goal progress. Domain-specific satisfaction was also a useful predictor of overall life satisfaction. However, extraversion, an indicator of personality, did not contribute directly to the prediction of domain and life satisfaction. The relationships of domain and life satisfaction, goal progress and life satisfaction, and goal progress and domain satisfaction were not stronger in life domains. Taken together, findings from these two studies verified that data generally offered a good fit to the social cognitive model of well-being. Life and domain-specific satisfaction, as a main aspect of SWB, was expected by social cognitive variables. Life satisfaction was predicted by social cognitive variables even after controlling for the effects of positive affectivity (Study 1) or extraversion (Study 2). Academic satisfaction was also the most consistent predictor of overall life satisfaction across the two studies.

In order to test the causal paths of the social cognitive model of well-being, Lent et al. (2009) collected data from 252 Portuguese college students using a longitudinal design. During the 1st and 16th weeks of the same academic semester, the relationships of academic self-efficacy, environmental support, goal progress, and academic adjustment were examined, along with global measures of positive affect and life satisfaction. The research findings supported a good fit to the data. In this study, the definition of well-being at the domain level was expanded

to include perceived academic stress and adjustment, as well as satisfaction. Self-efficacy and environmental support were predictors of goal progress, and positive academic adjustment predicted overall life satisfaction. Self-efficacy and positive affect were reciprocally related. However, contrary to prior cross-sectional studies, progress in academic goals did not contribute directly to academic adjustment or life satisfaction. Plus, positive affect did not directly influence academic adjustment and life satisfaction.

Another recent study examined factors affecting clients' career and life satisfaction in the first 6 months after having participated in career counseling (Verbruggen & Sels, 2010). Life satisfaction was positively related to clients' career satisfaction. Goal self-efficacy 6 months after career counseling, goal progress, and external barriers were related significantly and directly with career satisfaction. So, clients who had higher goal self-efficacy at the end of counseling seemed more satisfied with their career after 6 months. This result may have been caused by the mediation effects of external barriers, goal progress, and subsequent goal self-efficacy. Also, goal progress was positively related to clients' goal self-efficacy, while external barriers were negatively related to goal progress. Finally, there were no direct paths from personality to life satisfaction, career satisfaction, external barriers, or goal self-efficacy after 6 months.

Singley et al. (2010) tested Lent's (2004) model in a sample of 769 university students at two time points, 8 weeks apart, during the same semester. Findings were consistent with social cognitive theory (Bandura, 1986). Goal self-efficacy and goal progress were related to each other over time. Also, in keeping with Brunstein, Schultheiss, and Grassman's (1998) study, goal progress predicted domain and life satisfaction, while goal-related social supports predicted change in domain specific satisfaction. However, contrary to Lent et al.'s study (2005), domain-specific satisfaction and global satisfaction were not relationally reciprocal to one another. Lent

et al. found that these two variables have a bidirectional relationship within a cross-sectional design.

A recent study was conducted with a sample of 457 Mexican American college students to examine their academic and life satisfaction (Ojeda et al., 2011). The findings demonstrated the need for a theory to consider the unique cultural and academic experiences of more favorable expectations for completing college. Affirmative feelings were positively related to enculturation, acculturation, college self-efficacy, and academic and life satisfaction. Though enculturation, a source for fulfilling social connectedness and orientation to an individual's own cultural group, was positively related to college self-efficacy, there were not any significant effects on outcome expectations, academic goal progress, and academic satisfaction. Acculturation was related to college self-efficacy, and outcome expectations and college self-efficacy predicted positive anticipated outcomes, progress toward academic goals, and academic satisfaction. However, contrary to Lent et al.'s (2005) Study1, there was a positive relationship between college outcome expectations and academic satisfaction.

Based on Lent's (2004) model, the proposal can expect that there will be good support for the expectation that life satisfaction, an important aspect of SWB, will be predicted by social cognitive factors. Expected outcomes will be that life and academic satisfaction will influence social cognitive factors, such as environmental supports, self-efficacy, outcome expectations, goal progress, and personality traits. However, as previous studies (e.g., Lent et al., 2005; Ojeda et al., 2011) have indicated (a) the relationship between academic satisfaction and outcome expectation and (b) personality traits and academic and life satisfaction may possibly have different outcomes, because these relationships have shown different results. The latter relationship would especially need to be studied in depth. East Asian countries have different

cultures from Western countries (e.g., individualistic vs. collectivistic), so these cultural differences may play a significant role in experience and determining individuals' well-being (Sheu & Lent, 2009).

Factors of the Model

As a main predictor of life and domain-specific satisfaction in Lent's (2004) model of well-being, self-efficacy refers to personal beliefs about an individual's ability to conduct specific behaviors necessary for achieving goals or, more generally, to perform tasks for success in their contextual settings (Lent, 2008). Though a variety of studies have indicated that self-efficacy is related to educational or vocational choices and performance outcomes (e.g., Hactkett, Betz, Casas, & Rocha-Singh, 1992; Lent et al., 1994; Lent et al., 2005), self-efficacy beliefs are also assumed to have important implications for satisfaction and other affective states. Many studies have also examined self-efficacy in relation to educational satisfaction directly, as well as indirectly, through perceived goal progress (Lent et al., 2005; Lent & Brown, 2006a, 2008).

Personality traits are one of the strongest and most consistent predictors of subjective well-being (Diener et al., 1999). Studies of well-being have revealed that life satisfaction is linked to a variety of additional trait variables. For example, personality traits, such as neuroticism, extraversion, and conscientiousness, and affective traits, like positive and negative affect, are related to satisfaction (Connolly & Viswesvaran, 2000; Heller, Watson, & Ilies, 2004). So, measuring satisfaction or happiness should be considered based on reflections of affective dispositions (Lent, 2008).

As one of the main components in the social cognitive model of well-being, outcome expectations refer to the anticipated consequences of individual goals. Outcome expectations include imagined consequences of a specific series of action, whereas self-efficacy is concerned

with an individual's ability. Outcome expectations can also be explained as individuals' beliefs about the extent to which they will be able to satisfy their main values when particular career paths are pursued. Outcome expectations have both positive and negative directions and strengths. Individuals have a tendency to attempt behaviors that may result in highly valued outcomes, but they may avoid behaviors that result in negative consequences (Lent & Brown, 2006b). Outcome expectations also include the conditions and outcomes that people perceive they have actually received or are currently receiving and those they anticipate receiving in the future (Lent & Brown, 2008). Expected outcomes have been found to explain unique variance in satisfaction apart from self-efficacy and situational and dispositional affect (Lent, 2008).

A variety of environmental supports and barriers can be important sources of domain-specific and life satisfaction. Goal-specific environmental supports and resources are likely to promote life satisfaction. The absence of supports or the presence of obstacles that hinder goal progress may decrease satisfaction (Lent & Brown, 2006a). Also, some specific environmental supports like encouragement, provisions of modeling, and performance feedback, may help to create self-efficacy, goal pursuit, and outcome expectations (Bandura, 1986). Environmental support and barriers can be considered such as parental income or perceived aspects of the environment, including the availability of career role models and presence of gender bias (Lent & Brown, 2006b).

In the social cognitive perspective, a goal means an individual determination to affect a particular outcome or to attain a certain level of performance (Bandura, 1986). Many studies have confirmed that goals play an important role in motivating choice and performance behavior (Hackett et al., 1992; Lent et al., 1994, 2005) and also have identified that various goal properties (e.g., simply having goals, having valued goals, being committed to one's goals) have been

linked to satisfaction and well-being outcomes (Ryan & Deci, 2001). Goal pursuit and progress represent the main ways that people contribute to their own well-being. Thus, goal-directed behavior enables the exercise of personal agency in domain-specific and life satisfaction. Individuals can set their own goals, control their behavior in achieving them, and perceive that their goal-directed efforts can make positive outcomes that they expected (Lent & Brown, 2006a). Thus, people are capable of arranging conditions that improve their own happiness at work, school, and in other life contexts.

As one of the precursors of overall life satisfaction, domain satisfaction such as family, work, and school is partly determined by personality factors but is also affected by social cognitive mechanisms, such as goal-directed activity, self-efficacy, outcome expectations, and environmental supports and resources (Lent, 2004). People seem to be satisfied with their lives when they pursue and create progress for their personally-valued goals, feel competent at the tasks needed for successful performance and goal pursuit, expect favorable outcomes, and recognize their environment as supportive (Lent et al., 2009).

Life satisfaction is generally measured by asking people how happy they are with their lives as a whole. Life satisfaction is a dispositional variable like personality and affective traits. Life satisfaction or general happiness is responsive to environmental conditions and life changes, and becomes less stable over longer time intervals (Lent, 2008).

Cultural Influence on the Model

Students' perception of their quality of life is one of the main predictors of their well-being, so well-being may be strongly associated with satisfaction with life domains such as family, friends, school, and self (Suldo et al., 2008). However, though there may be some cross-cultural similarities regarding well-being, particularly life satisfaction, there are also profound cultural

differences (e.g., individualistic vs. collectivistic) that make individuals happy in their lives (Diener, Oishi, & Lucas, 2003).

Cultural factors may affect students' cognitive, emotional, and social development and their satisfaction through various social and cultural experiences. Self-related domains are the main sources of students' satisfaction in the U.S., because independence, personal feelings, and interests have more valuable meanings, while meeting social norms, expectations, and academic achievement are more meaningful values for Korean students' satisfaction, as the Korean culture values filial piety, parental control, humility, harmony with others, and schooling beyond personal values and individuals' interest (Park & Huebner, 2005). Park and Huebner's (2005) research revealed that Korean students have lower overall life satisfaction and lower life satisfaction with family, friends, school, self, and living environments than U.S. students. While satisfaction with family, self, and living environment were significant predictors of overall life satisfaction in both U.S. and Korean cultures, satisfaction with school was significant only for Korean students. The latter finding may result from the Korean culture's unique emphasis on academic achievement. Korean students who are successful in school receive more positive feedback from parents, teachers, and friends. Thus, positive school experiences are especially crucial for Korean students' satisfaction. Park (2005) mentioned that Korean students' life satisfaction in specific domains, such as friends, family, school, self, and living environment, and overall life satisfaction, seems to decrease with age, because as students grow up, they have a tendency to be relatively less satisfied with their lives. Also, the family domain was an important contributor to Korean students' life satisfaction across all ages, because the Korean culture emphasizes family obligations and respect for older people.

Therefore, cultural differences between Korea and Western countries may offer different perspectives on the social cognitive model of well-being. Though pursuing individual happiness is a more important value in Western countries, individuals in collectivist countries, such as Korea and China, may perceive individual satisfaction as less important but emphasize the well-being of their families or communities. Furthermore, relations among predictors and perceived domain and life satisfaction might be different between Western and Asian cultures. The causal paths from environmental and social support to self-efficacy, goal progress, and domain satisfaction may be stronger in Asian countries, because people seem to put greater importance on interpersonal relationships (Sheu & Lent, 2009).

The Korean culture might also have a different impact on the relationships between personality traits and satisfaction. Individuals in different cultures might manifest personality traits in somewhat different ways with different predictive power to perceived quality of life, although the influence of personality traits on well-being is universal across cultures (Sheu & Lent, 2009). For example, emotions with a positive or negative affect have a much more profound influence on the judgments of life satisfaction in individualist cultures than in collectivist cultures. On the other hand, cultural norms regarding the normative desirability of life satisfaction are as important as emotions when individuals in collectivist cultures make life satisfaction judgments (Suh, Diener, Oishi, & Triandis, 1998).

Students' Life Satisfaction

Life satisfaction is a positive subjective experience, reflects a tendency to experience life in satisfying ways, and also operates as an individual strength. Life satisfaction can be defined as individuals' cognitive evaluations of the positivity of their lives as a whole based on their own standards (Suldo & Huebner, 2004). Life satisfaction can be defined as a cognitive, global

appraisal that people make when considering their contentment with their life as a whole or in regard to specific domains of life such as family, environment, friends, and self. Life satisfaction is the more stable component and, thus, the indicator most frequently included in studies of youths' perceived quality of life (Suldo, Riley, & Shaffer, 2006).

Life satisfaction may be affected by memories and life domains, such as family, school, friends, and work, because people form a sense of their life satisfaction by making momentary judgments. Thus, life satisfaction can be broken down into satisfaction with various domains, like work and love, and can be influenced by current mood and situational influences that make certain memories of life domains. These domains can also be broken down more finely. Life satisfaction for individuals is not likely to be stored in a discrete and simple way but is a complex judgment that can be altered and updated. Even so, life satisfaction is fairly stable, because the judgments that individuals make and store as memories about specific aspects of their lives, as well as the life conditions on which life judgment rests, tend to be stable (Diener, 1994).

Life satisfaction has been mainly studied in adults; therefore adolescents' life satisfaction has been studied to a much lesser extent. Adolescents' life satisfaction seems to be affected by different social and individual resources (Danielsen, Samdal, Hetland, & Wold, 2009; Suldo & Huebner, 2004). In general, life-satisfied adolescents can blend school and social life appropriately and maintain strong relationships with family and friends. Also, students' life satisfaction can have both statistical and practical significance in relation to their school performance. Students who have higher overall life satisfaction generally have higher performance than those with lower levels of life satisfaction (Rode, Arthaud-Day, & Mooney, 2005).

Life satisfaction represents an overall attitude and consists of components of satisfaction in various domains of life, but the importance of any specific life domain to overall life satisfaction varies by population and context (Rode et al., 2005). For example, Korean students' life satisfaction in specific domains such as friends, family, school, self, and living environment, and overall life satisfaction seem to decrease with age. This is because as students mature, they seem to attribute relatively less satisfaction to their lives. Also, the family domain can be an important contributor to Korean students' life satisfaction across all ages because of Korean cultural emphases on parental control, family obligations, and respect for older people. School satisfaction can also be a consistent predictor of life satisfaction across all ages, though its importance may decrease with age, because Korean places an extremely high value on academic achievement (Park, 2005).

Factors Influencing Students' Satisfaction

Students' life satisfaction is linked to behavioral (e.g., grades received and in-school conduct), social (e.g., school climate, student interpersonal relations, and student-teacher relations), and cognitive contexts (e.g., academic personal belief, self-efficacy, attachment to school, and school satisfaction), largely through associations with students' satisfaction with school (Suldo et al., 2008). Schooling may be one of the most important factors to student life satisfaction, because students spend an immense amount of time at school (Danielsen et al., 2009; Suldo et al., 2008). Table 2.3 categorizes variables related to students' academic and life satisfaction into behavioral, social, and cognitive contexts.

Behavioral experience has been found to interfere with students' life satisfaction. Students with higher GPAs are more likely to demonstrate a higher level of life satisfaction along with socioeconomic status, self-esteem, and relationship with others (Chow, 2005). Self-concept of

academic ability has also been a consistent predictor of life satisfaction (Powers, 2008). However, behavior problems in school, such as cheating on tests, fighting in school, skipping class, and abusing alcohol or drugs, has a negative indirect effect on school satisfaction and global life satisfaction (Suldo et el., 2008).

Table 2.3

Summary of Students' Satisfaction and Related Variables

Categories	Major determinants	Representative studies
Behavioral context	GPA, self-concept of academic ability, and classroom behavior	Chow (2005), Powers (2008), Suldo et al. (2008)
Social context	Teacher and classmate relationship, school satisfaction, parental support, frequency of positive or negative major life events, and positive daily experience	Danielsen et al. (2009), Huebner (1991), Ash and Huebner (2001), McCullough, Huebner, and Laughlin (2000)
Cognitive context	Self-esteem, internal locus of control, extraversion, anxiety and neuroticism, personal academic beliefs, school satisfaction, attitude toward academic abilities, and motivation for academic behavior	Fogle, Huebner, and Laughlin, (2002), Huebner (1991), Suldo et al. (2008)

A growing body of research has confirmed that the quality of adolescents' home and school environments are particularly relevant to their quality of life. Previous studies have revealed that school-related social factors from teachers and classmates have an indirect influence on students' life satisfaction, but parental support and school satisfaction affects students' life satisfaction directly (Danielsen et al., 2009; Huebner, 1991). Some empirical studies have revealed that students' life satisfaction relates to how frequently they experience positive or negative major, acute life events, such as winning awards or experiencing the death of a family member (Ash & Huebner, 2001). The presence of positive daily experiences, such as hobbies, and frequent opportunities to help others predict adolescents' satisfaction better than the accumulation of major or daily life stressors (McCullough et al., 2000).

Researchers have continued to identify personality variables as significant correlates of students' academic and life satisfaction. For example, though self-esteem, internal locus of control, and extraversion are the strongest correlates of global life satisfaction (Huebner, 1991), anxiety and neuroticism are negatively related to perceived quality of life (Fogle et al., 2002). In addition, students' attitudes toward schooling, such as academic self-perception, motivation, and self-regulation, and goal valuation had a strong direct effect on life satisfaction. So, students' attitudes related to their academic abilities and motivation for academic behavior have significant roles to play in raising academic achievement and increasing students' satisfaction with school and their lives in general (Suldo et al., 2008).

Meister High School in Korea

History of Vocational Education in Korea

Education has been one of the major sources of economic growth and social development in Korea. In the past three decades, Korea has been able to assume responsibility for both primary and secondary educations and has also developed a higher education sector that is as large as those in other developed countries (Kim, 2002). As a school system, Korea uses a school *ladder* structure based on a 6-3-3-4 system, which maintains a single track of school levels in order to ensure that every citizen receives an elementary, secondary, and tertiary education without discrimination and according to student ability. The school system in Korea is made up of six years of elementary school, three years of middle school, three years of high school, and two to four years of college. Korean children must attend mandatory classes from primary school through middle school. High schools are divided into two types: general (academic) and vocational high schools. Institutions of higher education with four-year undergraduate programs

are classified into four categories, such as colleges and universities, teacher's colleges and colleges of education, air universities and open universities, and theological colleges (Lee, 2007).

The most distinctive characteristics of the Korean educational system are the egalitarian ideals and passion for education. The educational system evolved through egalitarianism since modern education was first introduced in Korea about a century ago. From the beginning, the government was keen on ensuring equal opportunity for all, regardless of gender, religion, geographic location, or socioeconomic status (Kim, 2002). Kim (2005) stated that Korean families spend almost as much on tutoring (2.9% of GDP) as the Korean government spends on education (3.4 % of GDP). Korean society has traditionally placed a high value on education. The demand for more and better education has remained strong and, thus, has created rigorous competition for college entrance, an inordinate amount of private tutoring expenses, and grade repetition in Korea. This passion for education has been reinforced by historical events, such as Japanese colonialism and the Korean War, and these experiences convinced Koreans to invest more in people than in physical capital. These factors could also explain such phenomena as extensive parental sacrifice for their children's education and their involvement in and contribution to schools (Kim, 2005).

Vocational high schools in Korea are institutions built with a mission, which is to prepare students with specific skills for employment. Vocational high schools educate skilled workers with sound occupational understanding and professional knowledge to make them adapt to rapid changes in an industrial society. In order to achieve these objectives, vocational high schools offer technical and vocational education programs in specialized fields such as agriculture, technology, business and commerce, and home economics. These vocational high schools serve as training grounds for technicians (Lee, 2007).

The vocational education system has evolved from a structure of three years of vocational high school and two years of technical school. In the 1960s, vocational and technical education started to attract the policy community's attention. The Korean government established a comprehensive economic development plan to supply qualified technicians for labor-intensive industries (Lee, 2007). During this period, the economy, especially the manufacturing sector, began to grow quickly. Because a steady supply of technical workforce was critical to the success of large-scale manufacturing industries, the government invested in building more vocational and technical high schools. At the same time, the technical education track was streamlined to satisfy the diverse needs of the growing industries. To provide specialized education, five-year technical schools were reorganized into two- to three-year junior colleges in the late 1970s (Kim, 2002). Until the 1980s, vocational high schools had contributed to economic development and had been considered prestigious in Korean society (Lee, 2007).

In the 1990s, two major policies for vocational high schools were developed and implemented by the Ministry of Education. The first policy focused on the expansion of vocational high schools and introduced the 2+1 system for cooperation between schools and businesses. The policy was developed based on the needs of the workplace, because Korea's economy was booming during this time, and it was experiencing subsequently severe labor shortages in the manufacturing industry (Kim, 2004). The policy to expand the number of vocational high schools, especially technical high schools, contributed to an increase in vocational high school enrollment. However, it had not reached the level anticipated and planned by the government. Even so, this rapid increase in the number of vocational high school students resulted in an increase in unemployment for graduates of vocational high schools since the Korean economic crisis of 1997 (Ihm, Kim, Shin, & Kim, 2000; Sang & Jong, 2001). In addition,

the 2+1 system (the first two years of study in vocational high schools and the last year of study in the workplace), based on the German dual system of apprenticeship, was introduced in the Korean vocational high schools in 1994. Government bodies, such as the Ministry of Education and the Ministry of Labor, had provided numerous funding supports to operate this system in schools and work environments. However, this system led to a confusing and disconnected system without laying a solid foundation for an industry-based training culture (Kim, 2004; Lee 1999).

Thus, this problem in Korean secondary vocational education attracted the public's attention, which eventually led to governmental action. In 1996, the Korean Presidential Commission on Education Reform suggested comprehensive secondary vocational education reform initiatives. The goal of vocational education reform was to establish a lifelong vocational education system in order to realize a lifelong learning society (Lee, 2007). The main purpose of the reform was to (a) provide opportunities for graduates of vocational high schools to continue with their studies through junior colleges, polytechnic universities, and even up to graduate school while they continued working, (b) revise the past policy emphasis on quantity in vocational and technical education to quality and emphasize quality in the management of the programs, (c) develop existing vocational high schools in various ways to ensure students the opportunity to choose what they wish to study, and (d) guarantee each vocational educational organization the right to exercise its autonomy and ingenuity to strengthen its activities (Kim, 2005).

These reforms also proposed a number of ways to improve and upgrade the vocational education system, such as introducing *integrated* and *specialized high schoo*ls. Integrated high schools combine and offer vocational and general high school curricula to enable students to

choose from a wide selection of courses irrespective of their field of study. A distinctive feature of integrated school is that it minimizes the number of compulsory courses that students must take and increases the number of elective courses (Lee, 2007). Students may choose to satisfy prerequisites for college education or to acquire work-related knowledge and skills to enter the workforce. Also, students can change their programs of study, if they change their minds or if circumstances force a change to a different path. Integrated courses of study can be organized around broad industries or occupational clusters, such as health occupations, engineering and manufacturing, business and finance, or communications technology (Ihm, 1999). In 2011, there were 182 integrated high schools in Korea (Statistics Korea, 2011).

Specialized high schools were introduced in 1998 and offer job preparation courses to students who prefer to learn practical skills rather than pursue a university education. This type of school provides diversified and specialized education within the existing high school framework. It is aimed at broadening the scope of the standardized curriculum to meet the diverse needs of high school students and to develop skills and knowledge required by industry (Jung et al., 2004). In 2011, there were 476 specialized high schools in electrical and electronic engineering, information technology, media and film, design arts, tourism and linguistics, cooking and food sciences, fashion and skincare, horticulture and environment, footwear design and production, and animation (Statistics Korea, 2011).

Introduction of Meister High Schools

In spite of the government's efforts on behalf of secondary vocational education, integrated and specialized schools have been criticized for various problems. First, it has been pointed out that a wide gap exists between the vocational competency demanded by industry and the training students receive from vocational high schools. Korean employers have complained

that vocational high schools do not teach competent technical experts who can apply their knowledge directly to specific industries upon graduation. The knowledge and skills learned in vocational high schools was determined to be outdated and did not reflect recent changes in the workplace. Plus, although vocational high schools offer a mixture of general and vocational curricula to prepare for college entrance and vocational training for employment, most students attending vocational high schools had not fully achieved either of these outcomes (Ihm, 1999)

Ihm, Chung, and Lee (1992) suggested another problem. Many vocational high school graduates do not stay at their jobs long because of poor working conditions, lack of promotion opportunities, and distaste for boring and repetitive tasks, which do not necessarily require three years of vocational high school. These problems might result from employers' preferences rather than student characteristics. Employers may prefer and are usually more willing to hire junior college and four-year college students, because the perception is that little difference exists in the level of skills demonstrated by graduates of these schools (Lee, 2007).

Many Korean parents do not consider vocational education a viable option for their children. Thus, the general perception of vocational high school students is that they generate low academic achievement, have a low motivation for learning, and lack the required vocational aptitude and interests, and in addition, these students are mainly from low-income families and lower socioeconomic classes (Korea Research Institute Vocational Education and Training, 2000; Sang & Jong, 2001). Many employers no longer consider graduates of a vocational high school as valuable to the workforce (Kim, 2004; Korea Research Institute Vocational Education and Training, 2000).

Some studies, such as Ok (1999) and Kang and Ok (2000), summarized the problems experienced by vocational high schools, especially specialized vocational high schools: (a) the

specialized high schools did not want to change their curriculum organization, and the operation of specialized curricula differed from those of existing schools, (b) the entrance system based on middle school grades was found to be inappropriate, (c) the specialized school system lacked effective measures to develop teachers' expertise and meet their needs, (d) the cooperation between the schools, local communities and industry was inadequate, (e) the financial support available to specialized schools was neither solid nor stable, (f) there are too many specialized schools whose curricula and teaching methods are not differentiated from those of existing schools, (g) the entrance system based on grades in middle school gives rise to a variety of problems, (h) textbooks for specialized schools had not been developed, (i) teachers did not have the appropriate expertise and needed to be given opportunities for development, and (j) there was no collaboration between local communities and industries.

There has been a distinct drop in the number of students enrolling in Korean vocational high schools relative to the total high school student population since 1995 (see Table 2.4).

Table 2.4

Number of General High School Students, Vocational High School Students, and Ratio of Vocational High School Students in Korea

Year	General high school students	Vocational high school students	Ratio of vocational high school students (%)
1995	1,246,427	911,453	42.2
2000	1,324,482	745,986	36.0
2005	1,259,792	503,104	28.5
2010	1,496,227	466,129	23.8
2011	1,497,544	446,254	23.0

Note. Adapted from "Statistics on Korean Education" by the Center for Education Statistics, 2011.

Also, in 2010, the dropout rate for vocational high schools was 3.8%, considerably higher than that of general high schools (see Table 2.5). This can be attributed to the poor reputation of vocational schools and the low quality of vocational education in general.

Table 2.5

The Dropout Rate of General and Vocational High School Students in Korea

School type	2004	2005	2006	2007	2008	2009	2010
General	0.8	0.8	1.0	1.1	1.1	1.2	1.4
Vocational	2.8	2.6	3.1	3.5	3.8	3.6	3.8

Note. Adapted from "Statistics on Korean Education" by the Center for Education Statistics, 2011

Based on these conditions, the Korean government has recognized the need to address the problems of previous vocational high schools and to develop vocational high schools and extend their roles in order to meet progressive workplace demands regarding lack of qualified workers due to the continuing growth of advanced industrial technology (Lee, 2007). For those reasons, in March of 2010, the Ministry of Education, Science, and Technology opened twenty-one Meister high schools and offered 16 majors, including mechanical engineering, new media, semiconductors, energy, medical equipment, automobile, electric engineering, shipbuilding, aircraft, steel, port logistics, oceanography, robot, and agricultural and life science.

As a new type of advanced vocational high school, the Meister high school was mainly formulated based on the industrial Meister schools in Germany. *Meister* is a German word with a meaning similar to *master* in English. Meister high schools are seen as a response to the emergence of a knowledge-based society. The purpose of Meister high schools is to allow graduates to work for companies and help students become *young masters* by adopting an educational curriculum that reflects various industrial requirements. Meister high schools have

developed a curriculum that is customized to the needs of business and industry; provide applied English coursework; and build employment networks with major industries. These schools also require industry-education cooperation that guarantees graduates' career paths: establishment of initial employment and improved policies to support both work and study. A student can be accepted at a Meister school through a special screening process that includes a review of his or her academic achievement, an interview process, and other personality factors, such as past school attendance, voluntary service, and extracurricular activities. Also, a larger number of national universities have allowed a special student admission system for incumbent employees who have graduated from Meister high schools (The Ministry of Education, Science, and Technology, 2009). Based on these efforts, the Meister high school has already contracted with companies to support industry-education cooperation, developed the educational curriculum with teachers and experienced employees from contracted companies, secured excellent teachers, improved the educational environment, and selected potential students (Chang, Kim, & Min, 2010).

In 2013, there are currently thirty-eight Meister high schools and twenty majors, including mechanical engineering, new media, semiconductors, energy, medical equipment, automobile, electric engineering, shipbuilding, aircraft, steel, port logistics, oceanography, robotics, and agricultural, life science, petro chemistry, fishery and marine products processing, and precise machining. All students at Meister high schools receive many benefits that previous vocational high schools did not offer such as tuition waivers, scholarships for students from low-income families, and free dormitories for better study environments. In addition, graduates are employed by leading businesses, such as Samsung, Hyundai, and Kia, and their military duty is postponed up to 4 years (Meister School, 2011).

Governmental supports, such as introducing a new type of vocational high school, have been proposed and conducted mainly from the lens of high school officials, such as principals, vice-principals and teachers, or government employees' perspectives, and have not focused on students' experiences or perspectives. That is, the main problems vocational high schools have mostly reflect social-structural problems, such as low employment, enrollment, and academic achievement of vocational high school students, but have not reflected the perceptions of the students themselves. However, students attending vocational high schools spend a considerable amount of time there, as well as those in academic high schools, and thus, one of the main aspects of students' lives could be school. As a key environment for students, however, school can contribute to the development of the educational and mental health of students. Successful learning experiences in school, in particular, can lead to significant progress and successful academic outcomes (Elmore & Huebner, 2010). School can also be an important area of socialization through social support from teachers, friends, satisfaction with school, and good academic achievement. School has a significant effect on adolescents' psychosocial development through the school climate and the attachment to school, teachers, and friends (Piko & Hamvai, 2010). As an institution that can have an important influence on students' satisfaction, school also plays an important role for students' positive adjustment and development by supporting a psychologically healthy environment (Baker, Dilly, Aupperlee, & Patil, 2003; Hui & Sun, 2010). Therefore, a study focusing on vocational high school students' perspectives on school life would be needed to expand our knowledge of the problem with vocational high schools.

Finally, though problems of previous vocational high schools have already prompted much research, those of Meister high schools have been investigated to a much lesser extent and have only been seriously examined recently, because this school was just introduced in 2010. Thus,

there is a need to study Meister high schools and its students to provide a better understanding of secondary vocational education programs in Korea.

CHAPTER 3

METHOD

Research Design

The purpose of the current study was to explore Lent's (2004) social cognitive model of well-being with Korean Meister high school students using structural equation modeling (SEM). Based on the social cognitive model of well-being, two research objectives were established: (a) describe Meister high school students' academic and life satisfaction using the social cognitive factors in Lent's model and (b) verify the social cognitive model of well-being using structural equation modeling (SEM). In order to achieve these research purposes and objectives, a correlational research design was used. Correlational research designs are used to discover relationships between variables (Gall, Gall, & Borg, 2007). The overall concern in correlational research is whether the data supports a specified theory and research questions and whether results support findings from previous studies (Creswell, 2012). The basic correlational research design is very simple and entails collecting data on two or more variables for each individual in a sample and, then, computing a correlation coefficient. However, the quality of most correlational research is determined by the depth of the rationale and theoretical framework that guides the research design, not the complexity of the design or the sophistication of analytical techniques (Gall et al., 2007).

Correlational research is based on the strength of relationships between variables. In the simplest form of a correlational study, the degree of correspondence between two variables is measured. A correlation study can be used when the purpose of a study is to unwind complex

social phenomenon, where multiple, related variables impact each other at the same time. Correlational research designs allow researchers to determine which of the independent variables, acting alone or in concert, significantly affect a dependent variable and also seek to situate relationships between independent and dependent variables in terms of a causal link (Lewis, 2001).

Correlational research designs have two main purposes. The first purpose is to explain the association between variables. In this form of research, the researcher identifies the extent to which two or more variables co-vary, which means how changes in one variable are reflected in changes in the other (Creswell, 2012). This purpose is useful for exploratory studies in areas where little is known and helps to identify specific variables that show promise of being important determinants of the features or behavioral patterns being studied. Reviewing previous studies and theories are especially helpful in identifying variables (Gall et al., 2007). Creswell (2012) summarized the main characteristics of this type of study: two or more variables are correlated, data are correlated at one point in time, all participants are analyzed as a single group, at least two scores are obtained for each individual and one for each variable, and correlation statistics are reported.

The second purpose of correlational research is to predict scores on one variable from individuals' scores on other variables. In this approach, the variables used for prediction have to be measured before the measurement of variables to be predicted. A prediction study provides three types of information: "(a) the extent to which a criterion behavior pattern can be predicted, (b) data for developing a theory about the determinants of the criterion behavior pattern, and (c) evidence about the predictive validity of the test or tests that were correlated with the criterion behavior pattern" (Gall et al., 2007, p. 342). In this type of study, researchers identify one or

more predictor variables and a criterion variable. A predictor variable is one used to make a forecast about an outcome in correlational research, and a criterion variable refers to an outcome being predicted (Creswell, 2012). The major difference between an explanatory and predictive relationship is that, though the former tends to be more concerned with the extent of a relationship, the latter seeks to maximize the correlation between the predictor (independent) and criterion (dependent) variables (Gall et al., 2007).

Recent studies have used more complex correlational techniques to involve more variables in the data analysis and get clearer pictures about complex relationships. However, the quality of a correlational research design can be determined not by more sophisticated statistical techniques but by the depth of the rational and theoretical bases that support the research design. The possibility of finding meaningful research results are increased when researchers use appropriate theories and previous research results to determine variables to correlate with one another (Gall et al., 2007).

There are advantages and disadvantages to using a correlational research design. The main advantage of this design over other research designs is that it allows researchers to analyze relationships among a large number of variables in a single study. Correlational research designs enable researchers to analyze how several variables influence a particular pattern of behavior by using correlational statistics, such as path analysis and structural equation modeling (Gall et al., 2007). This characteristic of a correlation research design allows researchers to measure social cognitive factors, domain-specificity, and life satisfaction to examine relationships among these variables. Structural equation modeling (SEM) allows testing causal relationships among these variables, as specified by the theory of the social cognitive model of well-being.

Correlational designs are also able to provide information about the degree of relationship between variables. In a causal-comparative design, differences in degree are ignored in favor of identifying whether statistically significant differences exist among variables (e.g., the results of t-tests or analysis of variance). However, the correlation coefficient provides a measure of the degree of the relationship between variables (Gall et al., 2007).

A disadvantage of correlational research designs is that results do not lead to strong causal conclusions, even though the results can be used to diagnose cause-and-effect relationships between variables. When researchers find significant relationships between variables, they can study causality by using an experimental research design (Gall et al., 2007). This is the main limitation of a correlational research design, because this design does not assume a necessary condition for determining causality that presumed causal variables need to precede effects in time (Singley et al., 2010). So, in order to minimize this disadvantage, comparing the results of previous longitudinal studies (e.g., Lent et al., 2009; Singley et al., 2010) would be needed when interpreting research outcomes. A longitudinal study can offer more convincing support for certain causal hypotheses than cross-sectional studies, because the longitudinal design enables testing of the temporal precedence between predictors and dependent variables (Sheu & Lent, 2009).

Correlational research designs are able to help researchers look for associations between variables and investigate the extent to which variables are related. That is, because correlational designs enable researchers to test the magnitude and direction of relationships between and among important variables in an educational situation, this design can be more appropriate for testing a social cognitive model of normative well-being for Korean Meister high schools.

Participants

The population for the current study was Korean Meister high school seniors in 2012. Senior students were selected as they represent the first senior class of Meister high school students since its opening in 2010. They may also have clearer academic goals than underclassmen at the Meister schools, because they have had to make decisions about their futures after high school such as their educations and careers (Meister School, 2012). In 2012, 3,600 senior students were enrolled in 21 Meister high schools throughout Korea. Among them, 3,141 students were boys (87.25%), and 459 students were girls (12.75%) (Meister School, 2012).

In addition, SEM requires a larger sample size to maintain power and obtain parameter estimates and standard errors. A typical sample size is about 200 cases, but this can be too small when analyzing a complex model (Kline, 2011). Still, no easily applicable and clear-cut general rules of thumb exist (Raykov & Marcuolides, 2006), but some researchers have recommended a sample size-to-parameters ratio of 20:1 (Jackson, 2003; Kline, 2011) and a sample size-to-variable of 20:1 (Costello & Osborne, 2005). Schumacker and Lomax (2010) have found that studies using from 250 to 500 participants are more likely to get validation of the model through the use of cross-validation.

Considering all these matters, the sample size for the current study was set at 500 with alpha = .05 and a moderate effect size of .5 statistical power. In order to get at least 500 Meister high school senior students, 7 mechanical engineering Meister high schools among the 16 majors at 21 Meister high schools in 2012 were selected as the main sample. Students enrolled in Meister high schools can have different perspectives on their career goals and paths based on their majors, because the curriculum and their work experiences are various regarding their

majors. Therefore, students focusing on the same major, such as mechanical engineering, may have similar career goals and career paths, and thus, similarity of the main sample can be maintained. There were 720 senior students (675 boys and 45 girls) majoring in mechanical engineering in seven Meister high schools in July 2012. In order to get the contact information of the seven schools, I contacted the Head of the Center for Meister High Schools at the Korea Research Institute of Vocational Education and Training (KRIVET). Because the Center for Meister High Schools was conducting research about policies and operates systems to support Meister high schools, this institution had all Meister high schools contact information and student information. I explained the research purpose to the head of the Center at KRIVET, and the head gave me all of the contact information with research permission for the current research.

Instrumentation

The social cognitive model of well-being includes seven variables: (a) environmental supports, (b) academic self-efficacy, (c) outcome expectation, (d) goal progress, (e) personality traits, (f) academic satisfaction, and (g) life satisfaction. For young participants, some instruments were rescaled into 7-point or 5-point scales. For example, the original version of academic coping-efficacy was a 10-point scale, but it was rescaled into a 7-point scale for using with the same scale of academic milestones. Outcome expectations and life satisfaction instruments were also rescaled into a 5-point scale from a 10-point and a 7-point scale respectively for using with the same scale of other instruments. It is possible to use fewer scale points with social cognitive constructs, such as a 5- or 7-point scale, as fewer scale points are especially useful for measuring young participants' perspectives (Lent & Brown, 2006b). Dawes (2008) found that 5- and 7- point scales can easily be rescaled to make it comparable to another, and data from 5-, 7-, and 10-point scales produced similar variance, kurtosis, and skewness so

that these scales are all comparable for statistical analysis such as regression, confirmatory factor analysis, and SEM.

Academic Self-efficacy

As the central determinant of social cognitive theory, self-efficacy refers to individuals' perceptions of their ability to organize and perform a series of actions required to achieve specified types of performance (Bandura, 1986). The most common way to conceptualize and measure self-efficacy in research on social cognitive career theory (SCCT) is to include information on an individual's beliefs about his or her perceived ability to successfully complete particular tasks in a given domain under normative conditions (content or task-specific self-efficacy) and to positively negotiate particular, domain-specific obstacles. SCCT was developed based on social cognitive theory in order to facilitate social cognitive research on career development. SCCT is a guide for conceptualizing and assessing four interrelated models such as academic and career interest development, choice, performance, and satisfaction using social cognitive variables (e.g., self-efficacy, outcome expectations, interests, goals, and contextual supports and barriers) (Lent & Brown, 2006b).

In my study, academic self-efficacy (Lent et al., 2005) included two aspects: academic milestones and academic coping-efficacy. The academic milestones scale was adapted from the self-efficacy subscale of the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia, & McKeachie, 1991). This scale asked students to respond to 8 items using a 7-point Likert scale (1=*strongly disagree* to 7=*strongly agree*) indicating their expectations and beliefs about their chosen academic major and general academic ability (e.g., "I'm confident I can understand the basic concepts taught in this course," "I'm confident I can understand the most complex material presented by the instructor in this course."). Prior versions of this scale

showed significant and positive relationships between scale scores and various learning outcomes. A Cronbach's α of .90 was reported for a previous administration of this scale (Joo et al., 2000), and a same coefficient alpha of .93 was obtained for scores in the pilot and main sample.

Academic coping-efficacy was assessed using a 7-item scale adapted from Lent et al. (2005). This scale asked students to indicate how confident they were in their ability to cope with real or possible barriers in their academic environment (e.g., "I can cope with a lack of support from teachers," "I will continue on in my intended major even if I don't feel well-liked by my classmates or teachers."). A 7-point scale (1=*strongly disagree* to 7=*strongly agree*) was used. A previous study using this scale produced an adequate reliability estimate (Cronbach's α = .89) and demonstrated a theory-consistent association with task self-efficacy, choice, barriers, and supports (Lent et al., 2003). A same coefficient alpha of .82 was obtained for scores in the pilot and main sample.

Outcome Expectations

Outcome expectations refer to beliefs about the consequences or outcomes of performing particular behaviors. These involve imagined consequences of a specific series of actions, whereas self-efficacy concerns an individual's abilities. Career-related outcome expectations can be explained as individuals' beliefs about the degree to which they can satisfy their primary values if they pursue particular career paths. Though there are positive and negative outcome expectations, positive outcomes have received more focus in research concerning SCCT, because it is assumed that people are likely to attempt actions that are able to help them attain highly valued results and to avoid behaviors that can result in adverse outcomes (Lent & Brown, 2006b).

They are also likely to feel satisfaction in their life domain when they predict positive outcomes (Lent et al., 2009).

In this study, outcome expectations employed by Lent et al. (2005) was gauged using a 10-item instrument that assessed participants' perceptions of various positive outcomes that could result from obtaining an academic degree (e.g., "Go into a field with high employment demand."). There were 10 positive outcomes and ratings were made on a 5-point scale ranging from *Strongly disagree* (1) to *Strongly agree* (5). Previous versions of this instrument have produced adequate evidence of reliability and validity. Lent et al. (2003) reported that the coefficient alpha of the scale was .91 and that this instrument was significantly correlated with interest, self-efficacy, and choice indices. A Cronbach's α values were .87 for the pilot study and .91 for the present sample.

Personality Traits

Many studies have supported the theory that personality traits are linked to domain-specific and life satisfaction, particularly positive and negative affectivity. Additionally, some Big Five Factors, such as neuroticism, extraversion, and conscientiousness, have also been reliably related to domain-specific and life satisfaction. However, it is important to note that such traits do not fully explain life or domain-specific satisfaction and that the relationship between personality traits and satisfaction does not explain the mechanisms whereby these traits are associated with satisfaction (Lent & Brown, 2008).

In this study, the Positive Affect (PA) scale of the Positive And Negative Affect Schedule (PANAS; Watson et al., 1988) was used to measure a person's tendency to experience positive emotions. The PANAS scale is commonly used to measure negative and positive affectivity (Connolly & Viswesvaran, 2000). Participants were asked to indicate the extent to which they

generally feel each of 10 positive emotions, such as enthusiasm and interest, along a 5-point scale (1 = *Very little or not at all*, 5 = *Extremely*). Lent et al. (2005) revealed that the PA scale is related to life satisfaction, academic self-efficacy, and environmental support. The original scale yielded internal consistency estimates of .88 (Watson et al., 1988). The alpha coefficients were .83 for the pilot study and .88 for the present sample.

Goal Progress

Goal progress and goal-directed behavior is one of the main elements of domain-specific and life satisfaction. A goal refers to personally-relevant objectives that lend a sense of purpose and direction to an individual's behavior (Lent & Brown, 2008). A significant amount of research has been conducted on goal-directed behavior and well-being. For instance, various goal properties, such as just having simple goals, having valued goals, and being committed to one's goals, have been found to be associated with well-being (Ryan & Deci, 2001). In addition, goal-directed behavior can help individuals join in personally- and culturally-valued activities, bring them into communication with others for mutual support, create life structure and meaning, and promote domain-specific and life satisfaction (Lent & Brown, 2008).

In my study, goal progress was measured with a 7-item instrument used by Lent et al. (2005). This scale asked participants to indicate how much progress they made toward a variety of academic goals. Participants responded by indicating their level of attainment for a variety of academic goals (e.g., "Studying effectively for exams in your major") that might be widely relevant to and developmentally appropriate for their school experience from 1 (*No progress at all*) to 5 (*Excellent progress*). Lent et al. reported that this scale produced coefficient alpha values of .86 and found that it correlated with self-efficacy, outcome expectations, environmental

support, and academic satisfaction in theory-consistent ways. Cronbach's α values were .89 for the pilot study and .85 for the present sample.

Environmental Supports

Studies have substantiated the idea that goal-relevant encouragement and resources, such as social or material support for an individual's goals, are able to facilitate perceived quality of life, whereas obstacles that hinder a person's goal progress and/or the absence of goal support may decrease satisfaction. Specific environmental variables are also related to fostering self-efficacy percepts. Some specific environmental supports, such as encouragement, provision of modeling, and performance feedback, are considered determinants of self-efficacy and outcome expectations and facilitate goal pursuit and satisfaction (Lent et al., 1994; Lent, 2008).

In this study, environmental supports used by Lent et al. (2005) were measured with a 9-item instrument including a set of conditions that may support participants' progress in their intended major. Participants indicated how much they agree with each statement (e.g., "I get encouragement from my friends for pursuing my intended major"), from 1 (*Strongly disagree*) to 5 (*Strongly agree*). This instrument has produced proper reliability estimates and indicated theoretically consistent relationships with efficacy beliefs and other measures in prior research. Lent et al. found that this measure produced internal consistency reliability estimates of .81 and showed theoretically consistent relations with self-efficacy, outcome expectations, and interest. The alpha coefficients were .82 for the pilot study and .84 for the present sample.

Academic and Life Satisfaction

Life satisfaction is a positive subjective experience and also operates as an individual strength. Thus, life satisfaction can be defined as individuals' cognitive evaluations of the positivity in their lives as a whole based on their own standards (Suldo & Huebner, 2004). Life

satisfaction may be affected by memories and life domains, because people form a sense of life satisfaction by judgments made at a given point in time. For this reason, life satisfaction can be broken down into contentment with various domains, such as work and love, and influenced by current mood and situational influences that create certain memories of life domains (Diener, 1994).

Academic satisfaction was assessed with a 7-item scale employed by Lent et al. (2005). This instrument asked participants to indicate the degree to which they are satisfied with overall and specific aspects of their academic experience (e.g., "I enjoy the level of intellectual stimulation in my courses."). Responses were obtained along a 5-point scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). The original scale yielded internal consistency estimates of .87 and correlated in theoretically consistent ways with intended academic persistence, life satisfaction and a variety of social cognitive variables (Lent et al., 2005). The alpha coefficients for the pilot sample were .71 and .90 for the main sample.

In order to measure life satisfaction, the Satisfaction With Life scale (SWLS) was used. Participants will indicate their level of agreement with each of the five items (e.g., "I am satisfied with my life.") along a 5-point scale (1 = *Strongly disagree*, 5 = *Strongly agree*). This instrument produced adequate internal consistency of .92 and was related to alternative measures of life satisfaction (Diener et al., 1985) and positive and negative affect (Watson et al., 1988). The alpha coefficients were .80 for the pilot sample and .86 for the main sample.

Before using these instruments, I obtained permission to use and modify each instrument. Then, instruments were modified for the Meister high school context. In addition, for Korean participants, I followed Brislin's (1970) back-translation method to translate English versions of each instrument into Korean. Back-translation is a popular method to maintain equivalence

between the original and translated versions and is widely used by cross-cultural researchers. In back translation, a target language version is translated back into the source language version to verify that accurate translation has occurred (Cha, Kim, & Erlen, 2007). As a bilingual translator, I translated instruments from English to Korean except the Satisfaction With Life scale (SWLS), because it already had a Korean version available (e.g., Diener et al., 1985). Then, a panel of three researchers validated these instruments. All reviewers had doctoral degrees in vocational education and research experience with the Korean Meister high school system. They examined the appropriateness, utility, and clarity of items and reviewed whether there were inappropriate or unclear words or sentences compared to the original versions and considering the Meister high school setting. Then, one Korean doctoral student at the University of Georgia with teaching experience in Korean high schools served as a second bilingual translator, independently back-translating the instruments from Korean to English. Next, the two versions of the instruments were compared for concept equivalence. All panel members finally agreed that the two versions of the instruments were identical and had no errors in meaning. For example, two items from the final Korean version of the academic satisfaction scale by Lent et al. (2005) were translated as '나는 전반적으로 학교생활에 만족하고 있다 (I am generally satisfied with my academic life),' and '나는 마이스터고와 내 전공을 선택한 것에 만족한다 (I feel satisfied with the decision to major in my intended field).'

Procedure

Prior to conducting the research I contacted the Center for Meister High Schools at KRIVET, located in Seoul, Korea. Ultimately 7 Meister high schools that support majors in mechanical engineering were contacted to obtain permission to collect data.

Before the main data collection, a pilot test was conducted to detect possible measurement problems and to check the validity of the scores. A total of 38 students majoring in electronics in one Meister high school participated in the pilot test. I visited the school, met with the principal, and asked students to complete the questionnaire. The alpha coefficients of each variable for the pilot sample ranged from .82 to .93. The mean scores for each variable for the pilot study ranged from 3.73 to 5.10 with a range of standard deviation from .52 to 1.09; Academic milestones = 5.10 (*SD* = 1.09); coping-efficacy = 5.10 (*SD* = .83); outcome expectations = 4.33 (*SD* = .52); goal progress = 3.63 (*SD* = .69); environmental supports = 4.07 (*SD* = .52); personality traits = 3.71 (*SD* = .54); academic satisfaction = 4.12 (*SD* = .71); and life satisfaction = 3.78 (*SD* = .80). I asked these students if any questions were difficult to understand or had ambiguous wording. Through conducting a pilot study, I corrected unexpected problems with wording and formatting of the instrument for the main data collection and analysis.

Data collection occurred in July 2012. The data collection process was conducted under the supervision and guidance of the head of the Center. The head of the Center reviewed my dissertation study and gave me permission to conduct the research. She also helped and supervised the data collection process.

First, a senior researcher at the Center contacted directors of each Meister high school to obtain permission from school principals, who serve as guardians of their students. When contacted, all school directors or principals recommended obtaining their written permission, collecting data from students at the same time and visiting their school during the second week of July before their summer break. So, I prepared and revised the instruments under the Center's supervision. Then, I visited seven Meister high schools, met the principals, and collected data from a total of 720 students during the second and third weeks of July 2012. When distributing

the questionnaires to students, I always explained the purpose and importance of the study, how to answer each question, and why I needed the students' help. Also, I mentioned that they could stop at any time if they felt uncomfortable answering. I informed them that their answers were going to be confidential.

Data Analysis

This study proposes to test Lent's (2004) social cognitive model of well-being with students at Korean Meister high schools. To effectively address the proposed research questions, SEM with Mplus version 6 was used.

Before conducting SEM analysis, several steps were taken to screen for the accuracy and quality of data. First, all data was input into a SPSS database. Each respondent's information was coded. I coded missing data as '99' and treated them as missing data. Cases with any missing values on an entire scale or same responses for all scale items were excluded. Data were also screened by running descriptive statistics and examining the range of values on all variables. Any case in the data set that had a value beyond the allowable range for a given variable was reviewed in its entirety to identify any erroneous data entry. Through these processes, a total of 667 cases from 720 participants were deemed usable for data analysis.

One main characteristic of SEM is that it explicitly explains measurement error using latent variables (Raycov & Marcoulides, 2006). So, SEM provides a powerful test of the causal relationships specified by theory, because it produces more valid and reliable measures of the variables being analyzed (Gall et al., 2007). SEM represents "hypotheses about the means, variance, and covariance of observed data in terms of a smaller number of structural parameters defined by a hypothesized underlying model" (Kaplan, 2009, p. 1). SEM consists of two main models: a structural model and a measurement model. A structural model represents the

relationship between the latent variables of interest. As explanatory variables, latent variables in SEM are generally consistent with a hypothetical construct that is not directly observable (Kline, 2011). However, a measurement model seeks to represent the relationship between latent variables and their manifest variables (Kaplan, 2009). Manifest variables mean observed variables in which researchers have collected scores and entered them into a data file (Kline, 2011).

SEM includes latent, endogenous, and exogenous variables. Latent variables mean constructs that cannot be observed directly. These variables cannot be measured directly and, hence, are inferred from a set of observed variables that can be measured using tests, surveys, or questionnaires (Raykov & Marcoulides, 2006). An assessment of behavior consists of the direct measurement of an observed variable and the indirect measurement of an unobserved variable. These measurements are called observed or manifest variables in the context of SEM. These observed variables serve as indicators of the underlying construct that they are presumed to represent (Byrne, 2012).

Latent variables consist of exogenous and endogenous variables. An exogenous latent variable is the same as an independent variable and can cause fluctuation in the values of other latent variables in the model. Fluctuation in the values of exogenous variables is not explained by the model; rather, they are assumed to be influenced by other factors external to the model. Endogenous latent variables are the same as dependent variables and are influenced directly or indirectly by the exogenous variables in the model. The model explains changes in the values of endogenous variables, because all latent variables that influence them are included in the model's specification (Byrne, 2012). An endogenous variable may sometimes work as an exogenous variable with respect to another variable, but this does not change its endogenous-variable status.

As long as there is at least a one-way arrow (one path) ending at the variable, it should be considered as an endogenous variable no matter how many other variables in the model are explained by it (Raykov & Marcoulides, 2006).

In the current study, all variables, such as environmental supports, academic self-efficacy, outcome expectations, goal progress, personality traits, academic satisfaction, and life satisfaction were used as latent variables. The current study had only one exogenous latent variable (latent independent variable), personality traits, because this variable is the only one which satisfies the condition of the exogenous variable that emanates paths (one-way arrows) but never receives a path (Raykov & Marcoulides, 2006). Other remaining variables, such as environmental supports, academic self-efficacy, outcome expectations, goal progress, academic satisfaction, and life satisfaction, served as latent endogenous variables (latent dependent variables), because they satisfy the condition of latent endogenous variables that must have at least one arrow pointing to it from another latent variable (Schumacker & Lomax, 2010).

There are advantages and disadvantages associated with SEM. Contrary to path analysis, which has the unrealistic assumption that variables carry no or negligible error, SEM relaxes the assumption of no errors and allows for the estimation of direct and indirect relationships between variables or constructs that are indicated by some imperfect observable measures by integrating latent variables into path models, even though they are not directly observable (Mueller, 1996). Latent variables and their relationships can be analyzed with the dependencies of psychological constructs without measurement errors (Nachitgall, Kroehne, Funke, & Steyer, 2003). SEM provides a mechanism for explaining measurement error in observed variables by including an error term for each fallible measure, though the traditional regression method effectively ignores potential measurement error, so that the results of regression may result in incorrect and possibly

misleading conclusions. SEM also allows researchers to develop, estimate, and test complicated multivariable models and to analyze both direct and indirect effects of variables. Direct effects are the effects that go directly from one variable to another variable, while indirect effects refer to the effects between two variables that are mediated by one or more intervening variables. Though an indirect effect can be analyzed through traditional regression analysis, it is only possible when there is no measurement error in the variables (Raykov & Marcoulides, 2006).

Another advantage of SEM, in contrast to factor analysis, is that SEM allows for the specification of a regression structure among the latent variables. Thus, researchers are able to hypothesize the effect of one latent construct on another in the modeling of causal direction (Byrne, 2012).

SEM does not have any information on causal dependencies, though under specific conditions. SEM can represent causal relationships (Nachitgall et al., 2003). The conditions necessary to set up causal relationships in SEM include time priority and a robust relationship in the presence or absence of other variables. Replications of research results with independent samples are crucial, especially if the models are obtained based on post hoc modifications or data trimming, which mean alternative models that fit the data when the hypothesized model is rejected are based on goodness of fit statistics. In addition, if SEM models are developed to predict future behaviors, their utility should be evaluated in that context (Lei & Wu, 2007).

SEM requires a large sample. Model estimation and statistical inference or hypothesis testing regarding a specific model is appropriate only if the sample size is not too small for the estimation method chosen. Larger models often contain larger numbers of model parameters and, hence, demand larger sample sizes (Lei & Wu, 2007). Although there is universal agreement among researchers that larger samples are more stable, there is no agreement as to what

constitutes a large sample (Raykove & Marcoulides, 2006). For example, Boomsma (1982) recommended 400, while Costello and Osborne (2005) recommended 20 participants per variable as the best practice. The accuracy and stability of SEM results decline with decreasing sample sizes, as well as with increasing numbers of variables. Kline (2011) recommended that the sample size should be more than 20 times the number of parameters being estimated, the minimum being a participant parameter-ratio of 10:1. The lower bound of the total sample size should be at least 200.

CHAPTER 4

RESULTS

This chapter presents the results of Korean Meister high school students' academic and life satisfaction and the relationship of satisfaction with social cognitive variables and personality traits. The purpose of this study was to test Lent's (2004) social cognitive model of well-being with a sample of students enrolled in Korean Meister high schools. Two research objectives were established: (a) describe Meister high school students' academic and life satisfaction using the social cognitive factors in Lent's model and (b) verify the social cognitive model of well-being using SEM including confirmatory factor analysis and path analysis.

Analysis of Research Objectives

To describe Meister high school students' academic and life satisfaction using the social cognitive factors in Lent's model (research objective 1), descriptive and correlation analysis was conducted. Table 4.1 shows the means, standard deviations, and correlations for each of the measures in the main sample. Each variable mean of the main sample ranged from 3.03 to 4.82 with a range of standard deviation from .69 to 1.16. As expected, statistically significant relationships were present for all subscales with each other with a range from .37 to .64, and these values were very similar to those of previous studies (e.g., Lent et al., 2005, 2007).

Table 4.1

Means, Standard Deviations, and Correlations among Predictor and Criterion Variables

Variables	*M*	*SD*	1	2	3	4	5	6	7	8
1. Academic milestones	4.82	1.16	-							
2. Academic coping-efficacy	4.57	.98	.64	-						
3. Outcome expectations	3.73	.91	.52	.50	-					
4. Goal progress	3.37	.84	.54	.52	.43	-				
5. Environmental supports	3.51	.76	.48	.52	.56	.45	-			
6. Personality traits	3.40	.75	.38	.43	.42	.37	.45	-		
7. Academic satisfaction	3.57	.74	.54	.49	.55	.48	.55	.44	-	
8. Life satisfaction	3.03	.69	.40	.39	.47	.37	.42	.43	.53	-

Note. $n = 667$. All correlations are significant. $p < .001$.

To verify Lent's (2004) model with Korean Meister high school students (research objective 2), SEM was conducted with confirmatory factor analysis to test the measurement model and path analysis to test the structural model. Before testing the fit of the measurement and structural models, the distribution of each variable was first examined, and item parceling was used to create multiple indicators for each variable. In order to test univariate and multivariate normality distribution of each variable, MULTINORM Macro in SAS version 8 was used. Table 4.2 shows the results of the univariate and multivariate normality tests of each variable. The Shapiro-Wilks univariate hypothesis test indicated that distributions of academic milestones, outcome expectations, personality traits, academic satisfaction, and life satisfaction were not univariate normal, and Mardia (skewness = 370.90, $p < .0001$; kurtosis = 21.86 $p < .0001$) and Henze-Zirkler (Henze-Zirkler $T = 31.39$, $p < .0001$) multivariate hypothesis tests were also significant, indicating that the multivariate normality of all variables did not hold. Therefore, the robust maximum likelihood procedure, which is recommended for data that violates normality assumptions (Hu, Bentler, & Kano, 1992), was used.

Table 4.2

Univariate and Multivariate Normality Tests for Predictor and Criterion Variables

Variables	Shapiro-Wilks W	*P*
Academic milestones	.97	<.0001
Academic coping-efficacy	.98	.1536
Outcome expectations	.97	<.0001
Goal progress	.98	.0015
Environmental supports	.98	.0224
Personality traits	.96	<.0001
Academic satisfaction	.96	<.0001
Life satisfaction	.97	<.0001

To control for measurement error and potential sampling error and to produce multiple observed indicators that represent each latent construct for both measurement and structural models (Lent et al., 2005; Ojeda et al., 2011), I created item parcels. A large number of indicators in SEM often result in a poor model fit to the data unless some errors terms are correlated with each other. Correlated errors indicate that the covariance in the observed indicators is explained by the underlying common factors and random error and by some uncertain shared causes in the observed indicators. Item parceling is a common method to handle a large number of items in a scale. Item parceling is a useful approach to enhance the model's fit without losing information and is recommended when multivariate normality assumption is violated. Item parceling is a way to sum or average the original item scores from two or more items and to use parceled scores instead of the original scores as new indicators of the construct or factors in SEM. Each parcel is more likely to be correlated with the construct and is less likely to be affected by the peculiar wording and method effects related to individual items. The parceled items are also more likely to conform to the multivariate normality assumption than the original items when they are unidimensional (Wang & Wang, 2012).

Because I modeled measurement error in the observed variables representing each of the constructs, multiple observed indicators were created for each construct from scale items. As a general rule, as the number of latent variables and indicators per variable increase, the complexity of the model increases. Also, it is impracticable to use all available and observed variables for model testing when considering the sample size (Fouad, Smith, & Zao, 2002). Therefore, in this study, a limited number of indicators for each latent construct were created from individual items instead of using all 63 items as indicators of the latent constructs. This can maximize the use of the sample size in terms of the number of parameters to be estimated in the model. I constructed reliable summary indicators for each latent construct using a similar method described by Fouad et al. (2002). An initial step in creating indicators consisted of fitting single-factor exploratory solutions to each of the item sets comprising the six scales. I then used item factor loadings to create indicator variables that represented each latent dimension and distributed the items according to their factor loadings. For example, outcome expectations formed three composites from nine items, and these items were ranked in terms of their factor loadings. The first indicator was formed by averaging the first, fourth, and seventh items; the second by averaging the second, fifth, and eighth items; and the third by averaging the third, sixth, and ninth items. The two academic milestones and academic coping efficacy measures were used as indicators of the academic self-efficacy factor. Goal progress was indexed by three indicators containing three to four averaged items: GP1 (items 1, 2, 3, 6) and GP2 (items 4, 5, 7). Environmental supports were indexed by three item parcels, with three averaged items in each parcel: ES1 (items 1, 4, 7), ES2 (items 2, 5, 8), and ES3 (items 3, 6, 9). Personality traits were represented by three indicators containing three to four averaged items: PT1 (items 2, 4, 7, 9), PT2 (items 3, 5, 7), and PT3 (items 1, 8, 10). Academic satisfaction was indexed by two

indicators containing three to four averaged items: AS1 (items 1, 3, 5, 7) and AS2 (items 2, 4, 6). Life satisfaction was represented by two indicators with two to three averaged items: LS1 (items 1, 3, 5) and LS2 (items 2, 4). In a similar manner, a subset of the original 63 items was used to form 17 summary indicators.

SEM procedures based on robust maximum likelihood estimation were conducted using Mplus version 6 to test the model's fit. A measurement model was examined first, and then, a structural model was tested. Three primary indices were employed to assess the adequacy of the model-data fit: the comparative fit index (CFI), root mean squared error of approximation (RMSEA), and standardized root mean squared residual (SRMR). CFI values $\geq .95$, RMSEA $\leq .05$, and SRMR values $\leq .05$ are typically considered as indicating acceptable levels of fit (Byrne, 2012).

I first tested the fit of the measurement model. One factor loading for each construct was fixed to 1 by default of Mplus, and all other loadings among the latent constructs were freely estimated. This scaling sets the scale for the factor to correspond to the scale of the observed indicator (Wang & Wang, 2012). The unstandardized parameter estimates of the measurement model are shown in Table 4.3, and their standardized values are shown in Figure 4.1. The measurement model produced a good fit to the data: CFI = .99, RMSEA = .03, 90% confidence interval [CI] = .018 - .036, and SRMR = .02, though χ^2 (98) = 147.28, $p = 0.001$. The χ^2 statistic is sensitive to the sample size, so this value tends to be large, and a model would usually be rejected when the sample size is large. However, SEM is based on large sample theory, and thus, a large sample size is critical to obtain accurate parameter estimates. Therefore, findings of well-fitting hypothesized models, where the χ^2 value approximates the degrees of freedom, have been recognized to be unrealistic in most SEM empirical research (Byrne, 2012).

Table 4.3

Confirmatory Factor Analysis Test for Predictor and Criterion Variables

Factors		Estimate	Standard error	*t*	*p*
Academic self-efficacy	AM	1	-	-	-
	CE	.82	.04	19.00	0.000
Outcome expectations	OE1	1	-	-	-
	OE2	.92	.04	26.10	0.000
	OE3	.97	.04	24.27	0.000
Goal progress	GP1	1	-	-	-
	GP2	.97	.07	13.69	0.000
Environmental supports	ES1	1	-	-	-
	ES2	.96	.05	20.58	0.000
	ES3	.90	.05	18.50	0.000
Personality traits	PT1	1	-	-	-
	PT2	.67	.06	12.11	0.000
	PT3	.90	.05	18.29	0.000
Academic satisfaction	AS1	1	-	-	-
	AS2	1.01	.04	27.88	0.000
Life satisfaction	LS1	1	-	-	-
	LS2	.95	.05	19.15	0.000

Note. AM = academic milestones; CE = academic coping efficacy; OE = outcome expectation parcel; GP = goal progress parcel; ES = environmental supports; PT = personality traits parcel; AS = academic satisfaction parcel; LS = life satisfaction parcel.

I next analyzed the structural model and estimated those paths among the factors that were specified by the theoretical model. The social cognitive model of well-being provided a good overall fit to the data: CFI = .99, RMSEA = .03, 90% confidence interval [CI] = .02 - .04, and SRMR = .03; all standardized residuals were less than 0.5, though $\chi^2(103) = 173.27$, p = 0.000.

Figure 4.1 shows the structural coefficients of the model. The social cognitive variables explained unique variance in life satisfaction. For example, academic satisfaction and personality traits produced a significant direct path to life satisfaction (R^2 = .51), but goal progress did not

produce a significant path to life satisfaction. Among the predictors of academic satisfaction, goal progress, outcome expectations, and environmental supports produced significant direct paths to academic satisfaction with the set of predictors accounting for 60.5% of the variance in academic satisfaction, but personality traits and academic self-efficacy did not produce significant direct paths to academic satisfaction. Goal progress was significantly predicted by academic self-efficacy and environmental supports, which collectively accounted for 71.0% of the variance in goal progress. Outcome expectations were significantly predicted by academic self-efficacy and environmental supports (R^2 = .58). Academic self-efficacy was significantly predicted by personality traits and environmental supports (R^2 = .52). Personality traits produced significant paths to environmental support, academic self-efficacy, and prediction of life satisfaction as well.

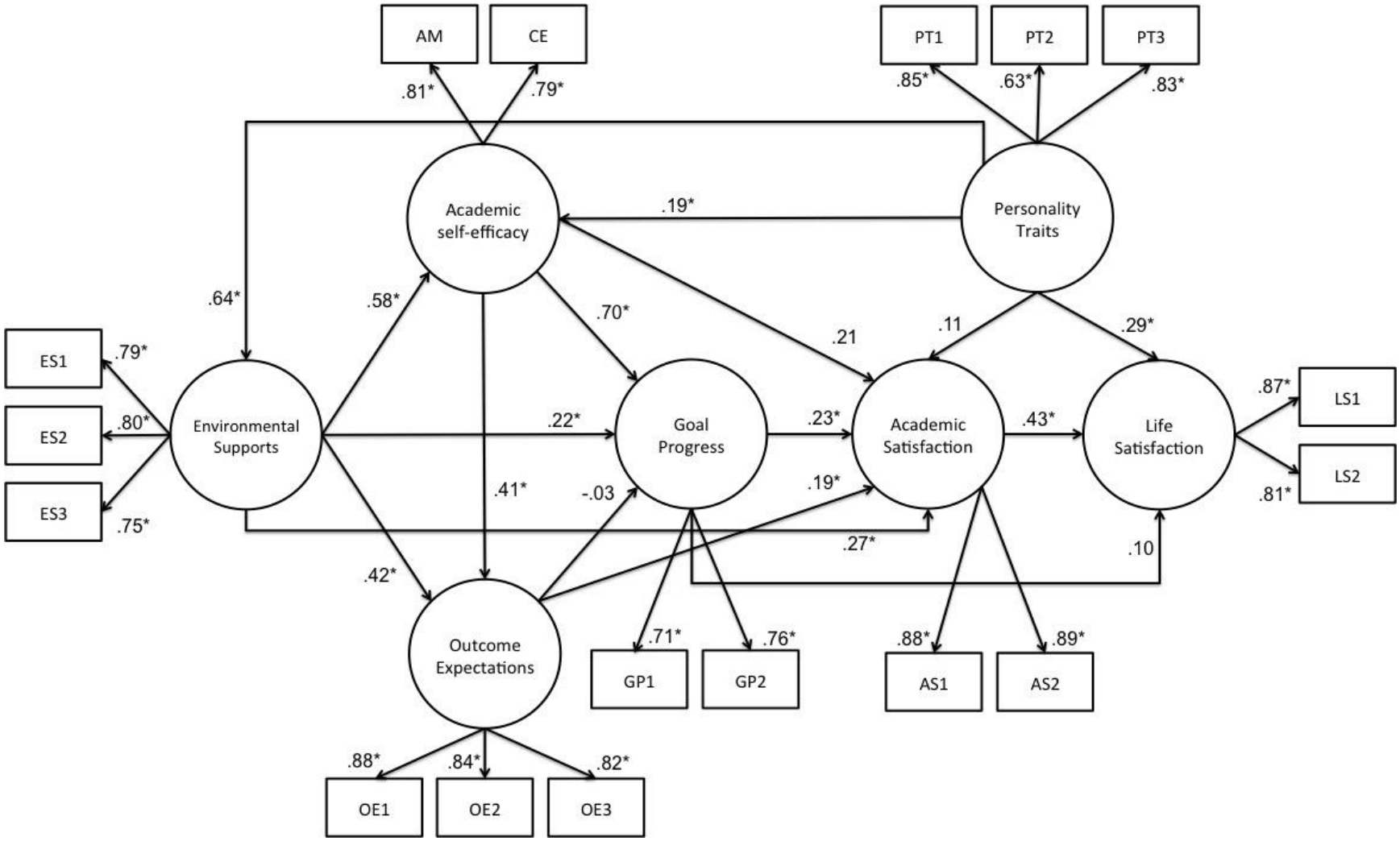

Figure 4.1. Standardized parameter values for the social cognitive model of well-being. *$p < .05$. AM = academic milestones; CE = academic coping efficacy; OE = outcome expectation parcel; GP = goal progress parcel; ES = environmental supports; PT = personality traits parcel; AS = academic satisfaction parcel; LS = life satisfaction parcel.

Table 4.4 shows the standardized direct, indirect, and total effects of each variable. All of the predictor variables showed statistically significant direct and indirect effects on each criterion variable except the relationships between academic self-efficacy and life satisfaction and outcome expectations and goal progress.

Table 4.4

Standardized Direct, Indirect, and Total Effects of Predictor to Criterion Variables

Measures		Effect decomposition		
Predictor	Criterion	Direct	Indirect	Total
Personality traits	Goal progress	-	.14*	.14*
	Academic self-efficacy	.19*	.38*	.57*
	Outcome expectations	-	.27*	.27*
	Academic satisfaction	.11	.15*	.15*
	Environmental supports	.64*	-	.64*
	Life satisfaction	.29*	-	.29*
Environmental supports	Outcome expectations	.42*	.24*	.66*
	Academic satisfaction	.27*	.05	.27*
	Goal progress	.22*	.40*	.62*
	Academic self-efficacy	.58*	-	.58*
Academic self-efficacy	Life satisfaction	-	.09	-
	Academic satisfaction	.21	.24*	.24*
	Outcome expectations	.41*	-	.41*
	Goal progress	.70*	-	.70*
Outcome expectations	Academic satisfaction	.19*	-	.19*
	Goal progress	-.03	-	-
Goal progress	Life satisfaction	.10	.10*	.10*
	Academic satisfaction	.23*	-.01	.23*
Academic satisfaction	Life satisfaction	.43*	-	.43*

Note. *$p < .05$

Personality traits had significant direct effects on environmental supports and life satisfaction and had significant indirect effects on goal progress and outcome expectations. Personality traits had a positive and significant indirect effect on academic satisfaction, but its direct effect on academic satisfaction was not significant. Environmental support had both direct

and indirect effects on outcome expectations and goal progress. Academic self-efficacy had significant direct effects on outcome expectations and goal progress. Academic self-efficacy also had a significant indirect effect on academic satisfaction, but its direct effect was not significant. Outcome expectations only had a significant direct effect on academic satisfaction. Goal progress only had a significant direct effect on academic satisfaction and only an indirect effect on life satisfaction. Academic satisfaction had a significant direct effect on life satisfaction.

CHAPTER 5

DISCUSSION

This chapter summarizes the entire study, including the purpose of the study, research method and analysis, and findings. Discussion of the findings—including implications, limitations, and recommendations for further practice and research—regarding Meister high school students' academic and life satisfaction are also presented.

Summary of the Study

Introduction

Korean vocational high schools focused on the manufacturing sector of the economy and were deemed prestigious until the 1980s. Vocational high schools in Korea educated students as skilled workers with appropriate occupational awareness and professional knowledge to make them able to adjust to changes in an industrial society (Lee, 2007). However, currently, most vocational high schools in Korea are in crisis. Historically, vocational high schools in Korea were focused on providing practical skills for work in factories and small- to medium-sized businesses. So, today many Koreans perceive vocational education and vocational high schools as *dead-end* or *second tier education,* because the training is geared toward low-income occupations and sequence low academic achievement (Ihm, 1999; Lee, 2007). Koreans' perspective of vocational education has contributed to the poor reputation of vocational schools and the low quality of vocational education in general.

To address these problems, the Korean Ministry of Education, Science and Technology opened *Meister* high schools in 2009 to provide specialized vocational training similar to job

training schools in Germany. The Meister high school is a new type of advanced vocational high school aimed at promoting secondary vocational education nationwide in an effort to make Korea a manufacturing leader. Meister high schools were designed to develop and improve the quality of vocational high schools, to foster skilled technicians, and to meet the progressive demands of continued growth in the manufacturing industry.

While the introduction of the Meister school concept is promising, one of the most meaningful ways to address problems in vocational high schools in Korea might be to improve students' satisfaction. Student satisfaction has been found to have an impact on academic achievement, self-esteem, and school attachment and satisfaction with school can be a result of academic success, as well as a supporter of academic performance (Samdal et al., 1999). In addition, students' social psychological adjustment to school is an important factor of achievement growth, school continuation, and postsecondary educational attainment (Kelly & Price, 2009).

Moro-Egido and Panades (2010) suggested that life satisfaction among students is influenced by family ties, self-evaluation, academic satisfaction, and the impact of recent events. Students' life satisfaction is strongly correlated with the average ratings of satisfaction with family, friends, school, living environment, and self and is also related to their academic achievement and mental health (Park, 2005). In addition, studies have indicated that there are cultural differences in the perceived levels and correlates of life satisfaction. For example, satisfaction with school contributes significantly to global life satisfaction for only Korean students, though satisfaction with family, self, and living environment contributes significantly to global life satisfaction in both U.S. and Korean students. Plus, satisfaction with the school

domain was a particularly strong correlate among Korean students' life satisfaction but not U.S. students (Park & Huebner, 2005).

Satisfaction has been one of the main factors of well-being research, especially subjective well-being. Ryan and Deci (2001) indicated that well-being is a complex construct that concentrates on optimal experience and functioning. Well-being is concerned about everyday interpersonal questions and intense logical study. Well-being research in Western society has mainly focused on two philosophical perspectives, subjective well-being (SWB) and psychological well-being (PWB). SWB refers to happiness as a state explained by the presence of positive affect, the absence of negative affect, and the overall evaluation of perceived quality of life. PWB is concerned with meaning, purpose, and the actualization of human potential. In this view, well-being is more than individual happiness but is focused on what individuals are thinking or doing rather than feeling (Sheu & Lent, 2009).

In an effort to integrate SWB and PWB conceptual frameworks, Lent (2004) developed a social cognitive model of well-being that includes personality, contextual, and social-cognitive variables that are related to determining domain and life satisfaction. Domain-specific and overall life satisfaction are conceptualized as key indexes of SWB, while self-efficacy and goal properties are viewed as key aspects of PWB (Sheu & Lent, 2009). This model is based on the principles of social cognitive career theory (SCCT), personality theories, and theories of well-being (Ojeda et al., 2011).

As the theoretical framework of this study, Lent's (2004) model is an educational and vocational extension of the notion of well-being that was designed to complement the SCCT elements of interest, choice, and performance (Lent et al., 2009). Lent's model explains the processes that support the acquisition and continuation of well-being under usual life conditions

(Lent, 2004; Sheu & Lent, 2009). Specifically, overall life satisfaction is influenced by personality variables and satisfaction with and progress in particular life domains. Domain-specific satisfaction is affected by personality traits, goal-directed activity, self-efficacy, outcome expectations, and perceived environmental supports and resources. Lent posited bidirectional paths, meaning that overall life satisfaction relates to domain-specific satisfaction and that goal progress influences self-efficacy and outcome expectations. Lent's model also predicts that goal progress is affected by self-efficacy, outcome expectations, and environmental supports. Self-efficacy is affected by environmental supports and personal traits. Outcome expectations are affected by self-efficacy and environmental supports. Finally, environmental supports might be affected by personal traits. Lent's model has been recognized for including and uniting cognitive, behavioral, social, personality, and affective variables to determine well-being (Ojeda et al., 2011).

However, one of the major limitations of Lent's (2004) model is its applicability cross-culturally (Sheu & Lent, 2009). Because Lent's model is still in an early stage of development, studies on Lent's model have been conducted mainly in the U.S. There have only been six studies on this model outside of the U.S. (e.g., Badri et al., 2013; Lent et al., 2009, 2011, 2012; Ojeda et al., 2011; Verbruggen & Sels, 2010), and there have not been any published reports related to Asian cultures. Asian countries with collectivistic or Confucian cultures may be very different from Western countries reflecting individualistic cultures. For example, personal happiness and personal satisfaction are very much individualistic pursuits in Western countries, but they may be more dependent on families or entire communities in Asian countries (Sheu & Lent, 2009). So, the causal paths and factors affecting domain-specific and life satisfaction could

be very different based on culture, and it is likely that many cross-cultural studies will be needed for a cross-national validation of Lent's model.

Therefore, a need exists to conduct research that gives a more comprehensive understanding of students' well-being and better intervention efforts to promote their optimal development. Also, there is a general need for research that investigates social cognitive influences on students' well-being in culturally different contexts. In particular, studying students' academic and life satisfaction in Korean Meister high school students by using social cognitive factors can provide a comprehensive understanding of students' well-being and a variety of internal (e.g., academic self-efficacy and personality traits) and external factors (e.g., environmental supports) influencing their satisfaction in diverse settings. Also, this study can give some implications for the practice of counseling in vocational high schools in Korea.

Purpose of the Study

The present study was the first to test Lent's (2004) social cognitive model of well-being with a sample of students who were enrolled in Korean Meister high schools. Lent's model states that academic and life satisfaction are determined by a combination of cognitive, behavioral, social, and personality variables. The following variables were included to test the model: personality traits, academic self-efficacy, outcome expectations, environmental supports, goal progress, and academic and life satisfaction.

Method

Participants and Procedures.

Participants in the main sample were 720 seniors (675 boys and 45 girls) majoring in engineering at seven Meister high schools in July 2012. Senior students were selected as they represent the first senior class of Meister high school students since its opening in 2010. They

may also have clearer academic goals than underclassmen at the Meister schools, because they have had to make decisions about their futures after high school such as their educations and careers (Meister School, 2012).

Before the main data collection, a pilot test was conducted to detect possible measurement problems and to check the validity of the scores. A total of 38 Meister students who were majoring in electronics in one Meister high school participated in the pilot test. The alpha coefficients of each variable for the pilot sample ranged from .82 to .93. The mean scores for each variable for the pilot study ranged from 3.73 to 5.10 with a range of standard deviation from .52 to 1.09. Through conducting a pilot study, I corrected unexpected problems with the wording and formatting of the instrument for the main data collection and analysis.

For the main data collection, I visited seven Meister high schools, met the principals, and collected data from a total of 720 students during the second and third weeks of July 2012. Whenever giving out questionnaires to students, I always explained the purpose and importance of the study, how to answer each question, and why I needed the students' help. To effectively address the proposed research objectives, SEM with Mplus version 6 was used. First, data were screened through running descriptive statistics and examining the range of values on all variables. Any case in the data set that had a value beyond the allowable range for a given variable was reviewed in its entirety to identify any erroneous data entry. Through these processes, a total sample of 667 participants from the 720 participants was used for the main data analysis.

Instruments.

For young participants, some instruments were rescaled into 7-point or 5-point scales. For example, academic coping-efficacy was rescaled from a 10-point scale to a 7-point scale for using with the same scale of academic milestones. Outcome expectations and life satisfaction

instruments were also rescaled into a 5-point scale from a 10-point and a 7-point scale respectively for using with the same scales of other instruments.

Academic self-efficacy. Academic self-efficacy, defined by Lent et al. (2005), included two aspects of academic self-efficacy: academic milestones and coping-efficacy. The academic milestones scale was adapted from the self-efficacy subscale of the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 1991). This scale asked students to respond to 8 items using a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*) indicating their expectations and beliefs about their chosen academic major and general academic ability (e.g., "I'm confident I can understand the basic concepts taught in this course," "I'm confident I can understand the most complex material presented by the instructor in this course."). Prior versions of this scale showed significant and positive relationships between scale scores and various learning outcomes (Joo et al., 2000). A Cronbach's α of .93 was obtained for scores in the main sample.

Academic coping-efficacy was assessed using a seven item scale adapted from (Lent et al., 2005). This scale asked students to indicate how confident they were in their ability to cope with real or possible barriers in their academic environment (e.g., "I can cope with a lack of support from teachers," "I will continue on in my intended major even if I don't feel well-liked by my classmates or teachers."). A 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*) was used. A previous study using this scale produced an adequate reliability estimate (Cronbach's α = .89) and demonstrated a theory-consistent association with task self-efficacy, choice, barriers, and supports (Lent et al., 2003). A coefficient alpha of .82 was obtained for scores in the main sample.

Outcome expectations. Outcome expectations employed by Lent et al. (2005) was gauged using a 10-item instrument that assessed participants' perceptions of various positive outcomes that could result from obtaining an academic degree (e.g., "Go into a field with high employment demand."). 10 positive outcomes and ratings were made on a 5-point scale ranging from *Strongly disagree* (1) to *Strongly agree* (5). Previous versions of this instrument have produced adequate evidence of reliability and validity. Lent et al. (2003) reported that the coefficient alpha of the scale was .91 and that this instrument was significantly correlated with interest, self-efficacy, and choice indices. A Cronbach's α value was .87 for the present sample.

Personality traits. The Positive Affect (PA) scale of the Positive And Negative Affect Schedule (PANAS; Watson et al., 1988) was used to measure a person's tendency to experience positive emotions. The PANAS scale is commonly used to measure negative and positive affectivity (Connolly & Viswesvaran, 2000). Participants were asked to indicate the extent to which they generally feel each of 10 positive emotions, such as enthusiasm and interest, along a 5-point scale (1 = *Very little or not at all*, 5 = *Extremely*). Lent et al. (2005) revealed that the PA scale is related to life satisfaction, academic self-efficacy, and environmental support. The original scale yielded internal consistency estimates of .88 (Watson et al., 1988). The alpha coefficient was .88 for the present sample.

Goal progress. Goal progress was measured with a 7-item instrument used by Lent et al. (2005). This scale asked participants to indicate how much progress they made toward a variety of academic goals. Participants responded by indicating their level of attainment for a variety of academic goals (e.g., "Studying effectively for exams in your major") that might be widely relevant to and developmentally appropriate for their school experience from 1 (*No progress at all*) to 5 (*Excellent progress*). Lent et al. reported that this scale produced coefficient alpha

values of .86 and found that it correlated with self-efficacy, outcome expectations, environmental support, and academic satisfaction in theory-consistent ways. The Cronbach's α value was .85 for the present sample.

Environmental supports. Environmental supports used by Lent et al. (2005) were measured with a 9-item instrument, including a set of conditions that may support participants' progress in their intended major. Participants indicated how much they agree with each statement (e.g., "I get encouragement from my friends for pursuing my intended major") from 1 (*Strongly disagree*) to 5 (*Strongly agree*). This instrument has produced proper reliability estimates and indicated theoretically consistent relationships with efficacy beliefs and other measures in prior research. Lent, et al. found that this measure produced internal consistency reliability estimates of .81 and showed theoretically consistent relations with self-efficacy, outcome expectations, and interest. The alpha coefficient was .84 for the present sample.

Academic satisfaction. Academic satisfaction was assessed with a 7-item scale employed by Lent et al. (2005). This instrument asks participants to indicate the degree to which they will be satisfied with overall and specific aspects of their academic experience (e.g., "I enjoy the level of intellectual stimulation in my courses."). Responses were obtained along a 5-point scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). The original scale yielded internal consistency estimates of .87 and correlated in theory consistent ways with intended academic persistence, life satisfaction and a variety of social cognitive variables (Lent et al., 2005). The alpha coefficient was .90 for the main sample.

Life satisfaction. In order to measure life satisfaction, the Satisfaction With Life Scale (SWLS) was used. Participants will indicate their level of agreement with each of the five items (e.g., "I am satisfied with my life.") along a 5-point scale (1 = *Strongly disagree*, 5 = *Strongly*

agree). This instrument produced an adequate internal consistency of .92 and was related to alternative measures of life satisfaction (Diener et al., 1985) and positive and negative affect (Watson et al., 1988). The alpha coefficient was .86 for the main sample.

Before using these instruments, they were modified for the Meister high school context. In addition, for Korean participants, I followed Brislin's (1970) back-translation method to translate the English version of each instrument into Korean.

Results

To describe Meister high school students' academic and life satisfaction using the social cognitive factors in Lent's model (research objective 1), descriptive and correlation analysis was conducted. Each variable mean of the main sample ranged from 3.03 to 4.82 with a range of standard deviation from .69 to 1.16. As expected, statistically significant relationships were present for all subscales with each other with a range from .37 to .64, and these values were very similar to those of previous studies (e.g., Lent et al., 2005, 2007).

To control for measurement error and potential sampling error and to produce multiple observed indicators that represent each latent construct for both measurement and structural models (Lent et al., 2005; Ojeda et al., 2011), I created item parcels. Because I modeled the measurement error in the observed variables that represent each of the constructs, I created multiple observed indicators for each construct from the scale items using a method described in a study conducted by Fouad et al. (2002). The two academic milestones and academic coping efficacy measures were used as indicators of the academic self-efficacy factor. The other constructs had two or three indicators of 2-4 averaged items each. Thus, a subset of the original 63 items was used to form 17 summary indicators.

Given indications of multivariate nonnormality (Mardia skewness = 370.90, $p < .0001$; kurtosis = 21.86 $p < .0001$; Henze-Zirkler $T = 31.39$, $p < .0001$), SEM procedures based on a robust maximum likelihood estimation were conducted using Mplus version 6 to test the model fit. As suggested by Byrne (2012), a measurement model was examined first, and then, a structural model was tested. Three primary indices were employed to assess the adequacy of model-data fit: the comparative fit index (CFI), root mean squared error of approximation (RMSEA), and standardized root mean squared residual (SRMR). CFI values ≥ .95, RMSEA ≤ .05, and SRMR values ≤ .05 are typically considered as indicating acceptable levels of fit.

I first tested the fit of the measurement model. One factor loading for each construct was fixed to 1; all other loadings and paths among the latent constructs were freely estimated. The measurement model produced a good fit to the data: CFI = .99, RMSEA = .03, 90% confidence interval [CI] = .02-.04, and SRMR = .02, though $\chi^2(98) = 147.28$, $p = 0.001$. I next analyzed the structural model and estimated those paths among the factors that were specified by the theoretical model. The social cognitive model of well-being provided a good overall fit to the data; CFI = .99, RMSEA = .03, 90% confidence interval [CI] = .02-.04, and SRMR = .03; all standardized residuals were less than 0.5, though $\chi^2(103) = 173.27$, $p = 0.000$.

Findings showed that the social cognitive variables explained unique variance in life satisfaction. Academic satisfaction and personality traits produced a significant direct path to life satisfaction ($R^2 = .51$), but goal progress did not produce a significant path to life satisfaction. Among the predictors of academic satisfaction, goal progress, outcome expectations, and environmental supports produced significant direct paths to academic satisfaction with the set of predictors accounting for 60.5% of the variance in academic satisfaction, but personality traits and academic self-efficacy did not produce significant direct paths to academic satisfaction. Goal

progress was significantly predicted by academic self-efficacy and environmental supports, which collectively accounted for 71.0% of the variance in goal progress. Outcome expectations were significantly predicted by academic self-efficacy and environmental supports ($R^2 = .58$). Academic self-efficacy was significantly predicted by personality traits and environmental supports ($R^2 = .52$). Personality traits produced significant paths to environmental support, academic self-efficacy, and prediction of life satisfaction as well. The results of standardized direct, indirect, and total effects of each variable indicated that personality traits had significant direct effects on environmental supports and life satisfaction and had significant indirect effects on goal progress and outcome expectations. Personality traits had a positive and significant indirect effect on academic satisfaction, but its direct effect on academic satisfaction was not significant. Environmental supports had both direct and indirect effects on outcome expectations and goal progress. Academic self-efficacy had significant direct effects on outcome expectations and goal progress. Academic self-efficacy also had a significant indirect effect on academic satisfaction, but its direct effect was not significant. Outcome expectations only had a significant direct effect on academic satisfaction. Goal progress only had a significant direct effect on academic satisfaction and only had an indirect effect on life satisfaction. Academic satisfaction had a significant direct effect on life satisfaction.

Discussion

This study is the first to test the validity of Lent's (2004) social cognitive model of well-being with a sample of Korean Meister high school students. To do so, two research objectives were posed, including (a) to describe Meister high school students' academic and life satisfaction using the social cognitive factors in Lent's model and (b) to verify Lent's model using SEM. To achieve the first research objective, correlation analysis showed that relationships among social

cognitive variables were consistent with theoretical expectations. Academic satisfaction showed statistically significant correlations with academic milestones, outcome expectations, environmental supports, and life satisfaction. These findings suggest that Meister high school students who possess more favorable academic self-efficacy and outcome expectations and receive positive environmental supports from teachers, parents, and friends are more likely to be satisfied with their academic experience. Life satisfaction also showed statistically significant relations to all social cognitive variables and academic satisfaction.

SEM analysis was conducted to achieve the second research objective. Lent's (2004) social cognitive model of well-being assumes that life satisfaction is affected by academic satisfaction, goal setting and progress, and personality traits. Domain-specific satisfaction is assumed to be affected by (a) setting and making progress toward personally relevant goals, (b) having strong self-efficacy beliefs in relation to an individual's task requirements and goals, (c) holding positive outcome expectations, (d) having access to environmental resources for promoting academic self-efficacy and goal pursuit, and (e) personality traits. Domain-specific and life satisfaction are affected by personality traits. Goal setting and progress are posited to affect an individual's overall satisfaction both directly and indirectly through academic satisfaction and are posited to be influenced by academic self-efficacy, outcome expectations, and environmental supports. Outcome expectations are assumed to be affected by environmental supports and academic self-efficacy. Self-efficacy is assumed to be influenced by personality traits and environmental supports. Personality traits are assumed to have both direct and indirect impacts on academic and life satisfaction through their relationship to self-efficacy and environmental supports.

Findings of the second objective generally support and extend the utility and validity of the hypothesized model of well-being in a culturally different context. Evidence revealed that life and academic satisfaction were associated with social cognitive variables and personality traits. Personality traits and academic satisfaction were individually predictive of Meister high school students' life satisfaction. Specifically, the predictive model explained substantial amounts of variance in academic and life satisfaction, 60.5% and 50.5%, respectively. The amount of explained variance in academic and life satisfaction in the present study was similar (e.g., Feldt, 2012; Lent et al, 2005) or greater than that documented in prior studies (e.g., Lent et al., 2011, 2012; Ojeda et al., 2011; Verbruggen & Sels, 2009). This result is consistent with the social cognitive model of well-being in that domain-specific social cognitive variables and the effect of personality traits explain unique variation in life satisfaction and represent sources of life satisfaction variance. As a result, the current study extends prior studies by explaining that domain-specific social cognitive variables may well play a practically and theoretically significant role in enhancing well-being in diverse contexts. In addition, environmental supports produced significant direct paths to each of the other variables in the model. Academic self-efficacy and environmental supports collectively accounted for 71% of the variance in goal progress and for 58% of the variance in outcome expectations. Personality traits and environmental supports accounted for 52% of the variance in academic self-efficacy for the full sample. These proportions of explained variance are substantial when compared with the results of past studies (e.g., Lent et al., 2007, 2012). These findings support the view that environmental factors serve as primary sources for efficacy information, and thus, Meister high school students may perceive their abilities based partly on the environmental support they expect to receive (Lent et al., 2003).

Academic self-efficacy was associated with making progress toward academic goals and positive expected outcomes. Other studies have found that self-efficacy predicts career outcome expectations and goal progress (Feldt, 2012). A strong belief about performing well in college was associated with the positive college education expectations and academic goal progress of Mexican American college students (Ojeda et al., 2011). Academic self-efficacy was shown to predict goal progress and outcome expectations among mainly White college students (Lent et al., 2005, 2007), and also, work-related self-efficacy had a significant and direct effect on work related goal progress among teachers (Badri et al., 2013; Duffy & Lent, 2009; Lent et al., 2011). Meister high school students who were confident in their ability to successfully complete academic tasks experienced more positive outcomes after graduation and made affirmative progress toward their academic goals.

Consistent with previous studies (Lent et al., 2005, 2007, 2012), environmental supports were related to academic self-efficacy, goal progress, outcome expectations, and academic satisfaction. Similarly, environmental supports also had a positive relationship with academic self-efficacy, goal progress, and academic satisfaction in longitudinal studies (Fouad et al., 2002; Lent et al., 2009, 2012). Meister high school students who received more favorable environmental supports for making progress toward their intended majors were more likely to have more confident feelings in achieving academic goals, to make more progress toward academic goals, to have affirmative expectations related to employment after graduation, and to be satisfied with their academic experience.

As in previous studies, personality traits had significant relationships with academic self-efficacy (Badri et al., 2013; Duffy & Lent, 2009; Lent et al., 2005, 2011, 2012; Ojeda et al., 2011), environmental supports (Badri et al., 2013; Duffy & Lent, 2009; Lent et al., 2005, 2007;

2011; Verbruggen & Sels, 2010), and life satisfaction (Lent et al., 2005, 2011, 2012). When considered together, it appears that Meister high school students with higher levels of trait-positive affect are more likely to have positive attitudes toward their overall life experience and to make more affirmative appraisals of their role related self-efficacy and environmental supports.

Contrary to the expectations, goal progress failed to account for unique predictive variance in life satisfaction, even though it had a significant indirect effect on life satisfaction through its relation to academic satisfaction. Academic self-efficacy and personality traits did not explain significant unique variations in academic satisfaction. However, academic self-efficacy influenced academic satisfaction indirectly via goal progress and outcome expectations, and personality traits affected academic satisfaction indirectly through its relations to academic self-efficacy and environmental supports. These findings suggested that there may be an important link between them, which indicates a positive relationship between personality traits and environmental supports and between personality traits and self-efficacy though social cognitive and personality variables that sometimes have been considered an entirely discrete set of constructs (Lent et al., 2005, 2007).

In addition, personality traits did not predict academic satisfaction directly. This result may be caused by domain specificity. As indicated in Lent at al.'s (2005) study, stronger predictive relations are generally created when the dimension of predictor variables is well matched with one of the criterion variables. Because the personality traits variable is generally considered to be a global and trait-like factor and the academic satisfaction variable was conceptualized as a domain-specific variable in this study, the two variables were not matched well along relevant domains or levels of specificity.

The unique cultural features of collectivist societies may also contribute to this result that personality traits did not predict academic satisfaction directly. Self-perceptions, such as feelings about the self, emotions, and other thoughts, are more frequently correlated with an individual's satisfaction in individualistic cultures, but such personal factors are less critical determinants of behavior in collectivist cultures. So, these factors weigh less heavily on individual satisfaction in collectivist cultures (Bradley & Corwyn, 2004; Diener et al., 1999). The strongest direct effect from environmental support to academic satisfaction in the current study may be consistent with this unique cultural feature, in which family and social obligations, relationships with others, and meeting social norms and expectations are the primary sources of individual satisfaction (Ferguson, Kasser, & Jahng, 2010; Park & Huebner, 2005).

The lack of a significant direct effect of academic self-efficacy on academic satisfaction is inconsistent with previous findings in academic, social, and work domains (e.g., Duffy & Lent, 2009; Lent et al., 2005, 2007; Ojeda et al., 2011). However, this result fits with the notion that individuals in collectivist nations, such as Korea, Japan, and China, are more focused on social norms and contexts rather than on individual goals (Badri et al., 2013; Bradley & Corwyn, 2004; Duffy & Lent, 2009; Lent et al., 2011). Traditionally, individualistic societies have underscored freedom and independence to pursue goals related to personal satisfaction, but collectivistic societies have limited expression of individual desires and interest to pursue individual satisfaction (Ferguson et al., 2010; Lent et al., 2005, 2007, 2012). Cultural differences may explain the lack of interaction between academic self-efficacy and academic satisfaction in the current study. The relationship between academic self-efficacy and academic satisfaction was mediated by goal progress and outcome expectations. As a result, Meister high school students in Korea with more confidence in their academic performance may not be more satisfied with their

academic experience, but they need to feel first that they have made progress toward a variety of academic goals, and they have more favorable expectations for obtaining a good job before they are fully satisfied with their academic experience.

Contrary to previous studies (Lent et al., 2005, 2007), outcome expectations explained unique variations in academic satisfaction. While significant correlations were reported between outcome expectations and academic satisfaction, the direct path from outcome expectations to academic satisfaction was not significant when controlling for other predictor variables in both of Lent's studies. One possibility is ethnic group affiliation (Ojeda et al., 2011). Participants in both of the two previous studies were mainly U.S. White students, and the path between outcome expectations and academic satisfaction was not significant, but Ojeda et al.'s study with Mexican American students found a significant positive relation between two variables. Also, meeting social norms, expectations, and academic achievement are the main sources of Korean students' satisfaction, because Korean culture values relationships with others beyond personal values and individual interests (Park & Huebner, 2005). Thus, ethnic group affiliation may control this relationship between the two variables.

Another possibility is that the outcome expectations instrument that was used in the current study appropriately measured the most important outcomes that Meister high school students expect to receive after graduation. Furthermore, the instrument included relatively short-term rewards for academic behavior rather than long-term rewards. This supports the notion that short-term rewards of academic behavior have a stronger impact on academic satisfaction than long-term rewards (Lent et al., 2007). The current study used the same instrument that was used in previous studies (Lent et al., 2005, 2007), but the instrument was validated for seniors, and their graduation and employment were a semester in the future. So, it is likely that Meister high

school students developed more accuracy in judging their expected outcomes after graduation based on their own academic experience and competencies.

Implications

The present findings held several useful implications for theory, research, and practice. First, this study demonstrated the importance of support from teachers, parents, and friends for Korean Meister high school students to be satisfied with their academic experience. Environmental supports had positive direct effects on academic satisfaction. This may indicate the importance for Korean Meister high school students to suggest academically preferable support, such as having access to a role model or mentor, encouragement from teachers, parents, and friends for studying and pursuing their major at the school. Second, the present study found that academic self-efficacy has a positive influence on Korean Meister high school students' academic satisfaction through other mediating variables, such as goal progress and outcome expectations. This result may suggest that teachers need to understand that self-efficacy's effectiveness to academic satisfaction requires other essential factors.

Limitations and Recommendations for Future Research

This study suggests extended evidence in terms of the utility and validity of the social cognitive model of well-being in a culturally different setting. However, the study's limitations should be noted. First, because this study used a cross-sectional design, interpretations regarding the causal relationships among social cognitive variables, personality traits, and academic and life satisfaction were limited. Although several longitudinal studies with samples in Western countries (Lent et al., 2008, 2009, 2012; Vecchio, Gerbino, Pastorelli, Del Bove, & Caprara, 2007; Verbruggen & Sels, 2010) have been conducted, no longitudinal studies have been conducted with participants in Eastern countries. Thus, future research that employs longitudinal

designs to support hypotheses regarding causality in the theoretical linkages among variables in the culturally-different context would benefit the scholarly community.

Second, as the first study to apply Lent's (2004) social cognitive model of well-being with Korean Meister high school students, more studies with other Korean samples, such as students attending regular high schools, community colleges and universities, would be needed. Such studies could suggest extended evidence of the applicability and generalization of the model to the Korean context.

Third, gender difference should be examined. Participants in this study were primarily male students (96.6%), because only engineering Meister high schools were selected, and the results of this study may not reflect gender difference. However, previous studies have revealed gender difference in terms of career-related behavior, such as self-efficacy (Lent et al., 2005, 2007; Tien, Wang, & Liu, 2009; Tokar, Thompson, Plaufcan, & Williams, 2007; Yeagley, Subich, & Tokar, 2010), so future studies need to consider the proportion of participants' genders to help understand the gender disparity within the social cognitive model of well-being.

Conclusion

This study indicates support for the social cognitive model of well-being and extends previous research in terms of the utility of the model in a culturally diverse situation by testing a cross-sectional model with Korean Meister high school students. Meister high school students were likely to report satisfaction with their academic experience when they received support from teachers, parents, and friends for pursuing and studying their majors, expected positive outcomes after graduation, and progressed toward their academic goals. Also, Meister high school students' life satisfaction was predicted by personality traits, academic satisfaction, and goal progress. Although the model fit the data well overall, not all of the hypotheses regarding

relationships between personal variables, such as academic self-efficacy, personality traits and satisfaction outcomes, were supported by findings. Therefore, future studies will be needed to test the validity of the model in more culturally diverse samples.

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APPENDIX A

STUDENTS QUESTIONNAIRE

(KOREAN VERSION)

마이스터고 학생의 학교와 삶 만족도, 사회인지요인에 관한 설문지

안녕하세요?
우선 귀중한 시간을 내어 주심에 깊은 감사의 말씀을 드립니다.

이 설문지는 마이스터 고등학교 학생의 학교와 삶 만족도, 그리고 사회인지요인에 관한 연구를 위한 것입니다. 이 연구는 여러분의 학교와 삶의 만족도에 영향을 미치는 여러 사회인지요인들 (자기효능감, 결과기대, 환경적지원, 목표, 개인적 성향 등)의 관계를 조사하는 것으로써, 연구결과는 여러분의 행복한 삶과 학교생활에 기여하는 데 도움을 줄 것입니다.

이 설문지에는 개인 성명을 묻는 문항이 전혀 없습니다. 작성해주신 사항은 오직 연구목적으로만 사용하며, 개인의 정보는 절대 누출되지 않는다는 점을 약속드립니다. 또한 응답하지 않은 문항이 하나라도 있으면, 그 설문지는 분석할 수 없습니다. 따라서 한 문장도 빠짐없이 솔직하게 응답하여 주시기를 간곡히 부탁드립니다.

설문 응답에 걸리는 시간은 약 15 분입니다.

혹시라도 저의 연구에 문의사항이 있으시면, 아래의 메일이나 전화번호로 언제든지 저나 지도교수에게 문의해 주시기 바랍니다. 학생 여러분들의 응답에 다시 한번 감사드립니다. 이루고 싶은 꿈을 가진 행복한 사람으로 성장하길 기원하며, 정성껏 작성해주신 설문결과를 토대로 마이스터 고등학교와 학생들의 발전에 도움이 되도록 하겠습니다.

2012 년 7 월

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1. 다음은 여러분이 자기 스스로를 어떻게 생각하고 있는지를 알아보기 위한 것입니다. 아래의 문장을 잘 읽으면서 그 문장의 내용이 **나 자신에 대해 생각하고 있는 것과 같은지**를 판단하여 가장 가까운 번호에 O 표 해주시기 바랍니다.

	전혀 동의 안함	→		보통임		→	매우 동의함
1. 나는 전공과목에서 좋은 성적을 받을 수 있다고 믿는다.	①	②	③	④	⑤	⑥	⑦
2. 나는 전공과목 교과서의 가장 어려운 부분도 이해할 수 있다.	①	②	③	④	⑤	⑥	⑦
3. 나는 전공시간에 배우는 기본 개념을 이해할 자신이 있다.	①	②	③	④	⑤	⑥	⑦
4. 나는 전공과목에서 선생님이 설명하는 가장 복잡한 내용도 이해할 자신이 있다.	①	②	③	④	⑤	⑥	⑦
5. 나는 전공 관련 과제나 시험에서 좋은 성적을 거둘 자신이 있다.	①	②	③	④	⑤	⑥	⑦
6. 나는 전공 수업시간에 적극적으로 참여할 수 있다.	①	②	③	④	⑤	⑥	⑦
7. 나는 전공 수업에서 배우는 기술을 완전히 습득할 자신이 있다.	①	②	③	④	⑤	⑥	⑦
8. 나는 전공의 난이도(어려움 정도), 선생님, 그리고 나의 능력을 고려할 때 내가 전공 수업을 잘 따라 갈 수 있다고 생각한다.	①	②	③	④	⑤	⑥	⑦
9. 나는 선생님의 지원(공부, 진로, 생활지도 등)이 부족하더라도 잘 대처할 수 있다.	①	②	③	④	⑤	⑥	⑦
10. 나는 경제적인 어려움이 있어도 고등학교를 마칠 수 있다.	①	②	③	④	⑤	⑥	⑦
11. 나는 선생님이나 친구들과 친하지 않아도 계속 전공공부를 할 것이다.	①	②	③	④	⑤	⑥	⑦
12. 나는 선생님과의 대화(공부 및 진로관련) 문제가 있을 경우 이를 해결할 수 있는 방법을 찾을 수 있다.	①	②	③	④	⑤	⑥	⑦
13. 나는 전공공부에 대한 압박과 놀고 싶은 마음을 잘 조절할 수 있다.	①	②	③	④	⑤	⑥	⑦
14. 나는 수업 분위기가 좋지 않아도 전공공부를 계속할 수 있다.	①	②	③	④	⑤	⑥	⑦
15. 나는 시간이 부족할 경우 효과적으로 공부할 수 있는 방법을 찾을 수 있다.	①	②	③	④	⑤	⑥	⑦

2. 다음은 여러분이 마이스터 고등학교를 졸업했을 때, 기대할 수 있는 결과에 대한 것입니다. 각 문항을 읽고 **마이스터 고등학교 졸업 후 기대하는 나의 모습**에 가장 적합하다고 생각되는 정도에 따라 O 표 해주시기 바랍니다.

	전혀 동의 안함	동의 안함	보통임	동의함	매우 동의함
1. 나는 학교를 졸업하면 좋은 직장을 구할 수 있을 것이다.	①	②	③	④	⑤
2. 나는 학교를 졸업하면 괜찮은 연봉을 받을 수 있을 것이다.	①	②	③	④	⑤
3. 나는 학교를 졸업하면 다른 사람들로부터 무시당하지 않을 것이다.	①	②	③	④	⑤
4. 나는 학교를 졸업하면 내가 만족할 만한 일을 수 있을 것이다.	①	②	③	④	⑤
5. 나는 학교를 졸업하면 나를 좀 더 소중하게 생각할 것 같다.	①	②	③	④	⑤
6. 나는 학교를 졸업하면 가족들이 좋아하는 직업을 가질 수 있을 것이다.	①	②	③	④	⑤
7. 나는 학교를 졸업하면 내 전공분야에서 훌륭한 사람이 될 수 있을 것이다.	①	②	③	④	⑤
8. 나는 학교를 졸업하면 일자리가 많은 분야에 취직을 할 수 있을 것이다.	①	②	③	④	⑤
9. 나는 학교를 졸업하면 내가 좋아하는 일을 할 수 있을 것이다.	①	②	③	④	⑤
10. 나는 학교를 졸업하면 나에게 도움(진로, 대인관계 등)을 줄 수 있는 사람들과 사귈 수 있을 것이다.	①	②	③	④	⑤

3. 다음은 여러분이 지난 3 년동안 여러분의 학업 목표와 관련하여 얼마나 많은 발전이 있었는가에 대한 것입니다. 각 문항을 읽고 **이번 학기까지 학업 목표를 얼마나 이루었는지**에 가장 적합하다고 생각되는 정도에 따라 O 표 해주시기 바랍니다.

	전혀 동의 안함	동의 안함	보통임	동의함	매우 동의함
1. 나는 이번 학기까지 높은 전공성적을 유지했다.	①	②	③	④	⑤
2. 나는 이번 학기까지 모든 과제를 잘 수행하였다.	①	②	③	④	⑤
3. 나는 이번 학기까지 효과적으로 시험 공부를 하였다.	①	②	③	④	⑤
4. 나는 이번 학기까지 전공을 변경 혹은 중도포기 없이 유지하였다.	①	②	③	④	⑤

5. 나는 이번 학기까지 졸업에 필요한 교과목을 효과적으로 이수하였다.	①	②	③	④	⑤
6. 나는 이번 학기까지 대부분의 과목에서 좋은 성적을 받았다.	①	②	③	④	⑤
7. 나는 이번 학기까지 수업 시간에 배운 다양한 장치나 기계를 효과적으로 이해하고 학습하였다.	①	②	③	④	⑤

4. 다음은 마이스터 고등학교를 다니면서 여러분이 받은 **전공에서의 학습 지원이나 방해요인**에 관한 것입니다. 각 문항을 읽고 가장 적합하다고 생각하는 정도에 따라 O 표 해주시기 바랍니다.

	전혀 동의 안함	**동의 안함**	**보통임**	**동의함**	**매우 동의함**
1. 나는 현재 내 전공에서 닮고 싶은 롤모델이 있다.	①	②	③	④	⑤
2. 나는 현재 전공공부를 하는데 있어서 선생님, 부모님과 같은 중요한 사람들로부터 도움을 받고 있다.	①	②	③	④	⑤
3. 나는 현재 내 전공분야에서 나와 비슷한(성격 혹은 성향) 사람이 있는 것 같다.	①	②	③	④	⑤
4. 나는 현재 내가 도움이 필요할 때에는 언제나 선생님으로부터 도움을 받을 수 있다.	①	②	③	④	⑤
5. 나의 친구들은 내가 전공공부를 하는데 도움이 된다.	①	②	③	④	⑤
6. 나는 현재 선생님으로부터 적절히 도움을 받고 있다.	①	②	③	④	⑤
7. 나는 현재 우리 가족이 내가 마이스터고(혹은 전공)에 입학한 것을 지지하고 있다고 생각한다.	①	②	③	④	⑤
8. 나는 현재 친한 친구들이나 친척들이 내가 마이스터고에 다니는 것을 자랑스러워한다고 생각한다.	①	②	③	④	⑤
9. 나는 현재 조언과 격려를 해줄 멘토가 있다.	①	②	③	④	⑤
10. 우리 가족은 내 전공을 부정적으로 생각한다.	①	②	③	④	⑤
11. 내 전공관련 직업을 구하는 것이 시간이 오래 걸리거나 진학(대학 또는 대학원)을 해야 할 것 같아 걱정된다.	①	②	③	④	⑤
12. 나는 전공 같은 친구들과 사이가 좋지 않다고 생각한다.	①	②	③	④	⑤
13. 내 친구들은 내 전공을 부정적으로 생각한다.	①	②	③	④	⑤
14. 내 부모님은 내가 전공을 바꾸기를 원하신다.	①	②	③	④	⑤

5. 다음은 다양한 감정이나 기분을 기술한 것입니다. 각 단어를 읽고 **지난 일주일 동안 느낀 감정이나 기분의 정도**를 가장 잘 나타낸 숫자에 O 표 해주시기 바랍니다.

	전혀 동의 안함	동의 안함	보통임	동의함	매우 동의함
1. 열정적인	①	②	③	④	⑤
2. 흥미있는	①	②	③	④	⑤
3. 단호한	①	②	③	④	⑤
4. 활기찬	①	②	③	④	⑤
5. 직관적인	①	②	③	④	⑤
6. 민첩한	①	②	③	④	⑤
7. 적극적인	①	②	③	④	⑤
8. 강한	①	②	③	④	⑤
9. 자랑스러운	①	②	③	④	⑤
10. 주의깊은	①	②	③	④	⑤

6. 다음은 마이스터 고등학교를 다니면서 여러분이 느낀 **학교(또는 전공) 만족**에 관한 것입니다. 각 문항을 읽고 가장 적합하다고 생각하는 정도에 따라 O 표 해주시기 바랍니다.

	전혀 동의 안함	동의 안함	보통임	동의함	매우 동의함
1. 나는 마이스터고와 내 전공을 선택한 것에 만족한다.	①	②	③	④	⑤
2. 나는 수업분위기가 편안하다고 생각한다.	①	②	③	④	⑤
3. 나는 대체로 전공수업이 즐겁다.	①	②	③	④	⑤
4. 나는 전반적으로 학교생활에 만족하고 있다.	①	②	③	④	⑤
5. 나는 수업시간에 새로운 내용을 배우는 것이 즐겁다.	①	②	③	④	⑤
6. 나는 열정적으로 전공공부를 하고 있다.	①	②	③	④	⑤
7. 나는 수업시간에 많이 배울 수 있어서 좋다.	①	②	③	④	⑤

7. 다음은 마이스터 고등학교를 다니면서 여러분이 느낀 **삶 만족**에 관한 것입니다. 각 문항을 읽고 가장 적합하다고 생각하는 정도에 따라 O 표 해주시기 바랍니다.

	전혀 동의 안함	동의 안함	보통임	동의함	매우 동의함
1. 지금까지 나의 삶은 내가 꿈꾸던 삶과 비슷하다.	①	②	③	④	⑤
2. 나는 좋은 생활 환경에서 살고 있다.	①	②	③	④	⑤
3. 나는 내 삶에 만족한다.	①	②	③	④	⑤
4. 지금까지 나는 원하는 것을 대부분 이루었다.	①	②	③	④	⑤
5. 다시 태어난다 해도, 나는 지금처럼 살고 싶다.	①	②	③	④	⑤

8. 다음은 일반적 사항에 대한 질문입니다.

1) 학생이 재학중인 학교의 학과명은 무엇입니까?

( )

2) 학생의 성별은 무엇입니까? ( )

① 남자 ② 여자

※ 연구결과가 궁금하시면 e-mail 주소를 적어주세요. 적어주신 e-mail 주소로 보내드리겠습니다.

( )

APPENDIX B

PRINCIPAL PERMISSION LETTER

PRINCIPAL PERMISSION FORM

As a guardian for all students in my school, I agree to allow my students to take part in a research study titled, "Social Cognitive Factors of Academic and Life Satisfaction in Meister High School Students in South Korea," which is being conducted by Mr. Minwook Lee, from the Workforce Education, Leadership, and Social Foundations Department at the University of Georgia under the direction of Dr. Jay W. Rojewski. My students' participation is voluntary which means I do not have to allow my students to be in this study if I do not want to. My students can refuse to participate or stop taking part at any time without giving any reason, and without penalty or loss of benefits to which she/he is otherwise entitled. I can ask to have the information that can be identified as my students' returned to me, removed from the research records, or destroyed.

- The reason for the study is to find out which social cognitive variables (e.g., Self-efficacy, Outcome Expectations, Personality Traits, Environmental Support, and Goal Progress) have impact on students' academic and life satisfaction

- Students who take part may improve their perceived level of academic and life satisfaction. The researcher also hopes to learn something that may help students feel academic and life satisfaction better in the future.

- If I allow my students to take part, my students will be asked to have an opportunity to answer questionnaire about students' academic and life satisfaction, and social cognitive variables which is mentioned above. The researcher will ask my students to do this activity one time. This activity will take place during free study time and will not interfere with class. If I do not want my students to take part then she/he will be allowed to study as usual.

- The research is not expected to cause any harm or discomfort. My students can quit at any time. My students' grade will not be affected if my students decide not to participate or to stop taking part.

- Any individually-identifiable information collected about my students will be kept confidential unless otherwise required by law. My students' identity will be coded, and all data will be kept in a secured location.

- The researcher will answer any questions about the research now, or during the course of the project, and can be reached by telephone at +1.706.206.3483 (+82.10.8671.8279) or email at wook0623@uga.edu. I may also contact the professor supervising the research, Dr. Jay W. Rojewski, at +1.706.542.4461 or rojewski@uga.edu.

- I understand the study procedures described above. My questions have been answered to my satisfaction, and I agree to allow my students to take part in this study. I have been given a copy of this form to keep.

Minwook Lee		09/09/2012
Name of Researcher	Signature	Date
SEUNGHEE LEE		29. Feb. 2012.
Name of Principal	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your students' rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu.

Minwook Lee		09/10/2012
Name of Researcher	Signature	Date
[illegible]	[illegible]	2012. 9. 10
Name of Principal	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your students' rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu.

Minwook Lee		09/11/2012
Name of Researcher	Signature	Date
최 재 은	최 재 은	2012. 7. 11.
Name of Principal	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your students' rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu.

Minwook Lee		07/11/2012
Name of Researcher	Signature	Date
장 천 정	장천정	2012. 7. 11
Name of Principal	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your students' rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu.

Minwook Lee		09/12/2012
Name of Researcher	Signature	Date
[illegible]		2012. 9. 12
Name of Principal	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your students' rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu.

Minwook Lee		07/16/2012
Name of Researcher	Signature	Date
최종영	최종영	2012.07.16.
Name of Principal	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your students' rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu.

Minwook Lee		07/17/2012
Name of Researcher	Signature	Date
YONG LANG KIM		2012. 7. 17
Name of Principal	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your students' rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu.