

ABSTRACT

Title of thesis: PREDICTING UNDERGRADUATE MUSIC MAJORS' ACADEMIC ADJUSTMENT AND PERSISTENCE INTENTIONS

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The vocational/counseling psychology literature has devoted limited attention to factors that promote or hinder the career development of musicians. To address this gap, the current study adopted social cognitive career theory (SCCT) as a framework to examine the experiences of musicians at a formative point in their development – the first few years of college, during which many would-be musicians either confirm or abandon their career plans. This study combines features of SCCT's well-being and choice models to explore social cognitive and personality factors that might predict satisfaction with, and intended persistence in, undergraduate music majors. In the current study, I tested a number of the models' central predictions in the context of music major education. In particular, I hypothesized that academic adjustment, as indexed by academic domain satisfaction and stress, would be predicted by favorable levels of music major-relevant self-efficacy, outcome expectations, social support, goal progress, and trait affect. I also hypothesized that academic adjustment would, in turn, predict intentions to persist in the music curriculum beyond the first two years of college. In addition to their indirect links through satisfaction, self-efficacy and outcome expectations were posited to

produce direct links to persistence intentions. Participants were 260 first- and second-year undergraduate music majors. The hypothesized model produced excellent fit to the data and accounted well for variation in both music major satisfaction and persistence intentions. With a few exceptions (e.g., a non-significant direct path from outcome expectations to persistence intentions), most of the path coefficients were statistically significant and in the expected direction. These findings suggest that this adaptation of the SCCT well-being and choice models offers a useful framework from which to study the academic satisfaction and persistence intentions of music majors.

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PERSISTENCE INTENTIONS

by

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Table of Contents

Table of Contents.....	ii
List of Tables.....	iv
List of Figures.....	v
Chapter 1: Introduction.....	1
Research Questions and Hypotheses.....	7
Chapter 2: Method.....	10
Participants.....	10
Measures.....	12
Academic goal progress.....	12
Academic satisfaction.....	13
Academic self-efficacy.....	14
Academic environmental support.....	15
Positive and negative affect.....	16
Outcome expectations.....	17
Intended persistence.....	18
Perceived stress scale.....	18
Demographics.....	19
Procedure.....	20
Chapter 3: Results.....	22
Preliminary analyses.....	22
Path analysis.....	25
Chapter 4: Discussion.....	27
Limitations and Directions for Further Research.....	31
Conclusion.....	34
Chapter 5: Extended Literature Review.....	36
Social Cognitive Career Theory.....	38
SCCT Model of Well-Being.....	38
Positive and negative affect.....	40
Academic self-efficacy.....	41
Academic outcome expectations.....	42
Academic goal progress.....	42
Environmental supports.....	43
Academic adjustment.....	43
Intended persistence.....	44
Validity of the Academic Well-being Model.....	45
Academic Well-Being Model and Undergraduate Music Majors.....	46
Academic stress in music students.....	47
Affective dispositions and music majors.....	47
Persistence in music majors.....	49
Satisfaction in music majors.....	49
Self-efficacy in music performance majors.....	50
Self-efficacy and music performance anxiety.....	50
Gender differences in music majors.....	51
Context of COVID-19.....	51

Summary	52
Tables and Appendices	53
Table 1	53
Table 2	56
Table 3	57
Appendix A	58
Appendix B	59
Appendix C	61
Appendix D	64
Appendix E	68
Appendix F	69
Appendix G	70
Appendix H	71
Appendix I	72
Appendix J	74
Appendix K	75
Appendix L	76
Appendix M	77
References	78

List of Tables

Table 1: Demographic Information Sample	53
Table 2: Descriptive Statistics for Measurement Development Sample	56
Table 3: Bivariate Correlations Between SCCT Variables	57

List of Figures

Figure 1: Integrative model of well-being under normal life conditions.	7, 39
Figure 2: A social cognitive model of academic adjustment and persistence intentions in undergraduate music majors.	9
Figure 3: Model of wellbeing as applied to the academic satisfaction and persistence intentions.	27

Introduction

The career of a performing artist is more than just a job (Roncaglia, 2008); the identity of a performing artist often intimately fuses career pursuits and personal passions. Blending these personal and career roles makes it difficult to unravel oneself from one's profession. While this may serve to improve performance, it also may precipitate maladaptive patterns (Griffith, 2019). The academic and career paths of musicians are highly competitive, with half of music education majors withdrawing from the major prior to degree completion (Gavin, 2010). A musician's career is also often marked by much volatility as many musicians are hired on a contract-to-contract basis and are prone to experience lulls in booking work. For workers in general, job satisfaction ratings tend to fluctuate more when they change employers or occupations than when they remain in stable positions (Staw & Ross, 1985). Since music careers often reflect a lack of stability, how does this affect the well-being of musicians?

Nearly two percent of students enrolled in higher education are music majors (Higher Education Arts Data Services). Public support for the arts tends to be quite variable, especially in the U.S. The fluctuation of societal support for the performing arts is reflected in both available funding of and access to arts education. For example, funds such as the National Endowment of the Arts are periodically threatened by political winds and the state of the economy. Exposure to formative experiences that could lead to a music career is also distributed unevenly based on demographic factors. For example, only 26% of Hispanic individuals and 28% of African Americans – compared to 59% of White individuals – between the ages of 18-24 report having received a visual or performing arts education in childhood (Survey of Public Participation, 2008). Not only do musicians often face uncertain support from society as a whole, but they also often face this lack of support within familial and social circles. For instance, many music majors

are all too familiar with the statement made around the dinner table, “And what’s your backup plan?”

Music performance anxiety has recently become a prevalent focus of the literature on the psychology of music (Kenny, 2011). Sternbach (1995) referred to the working conditions of professional musicians as creating a “total stress quotient” far exceeding that of other professions. *Domain satisfaction* (satisfaction within a specific area of one’s life, e.g., satisfaction with work) and *affect* (e.g., low levels of perceived stress) have been found to be reciprocally related to overall life satisfaction in general samples (Lent, 2004). For musicians specifically, low levels of stress in central life domains can lead to satisfaction with role performance (Kenny, 2009). Yet 60% of professional musicians report experiencing performance anxiety severe enough to affect their professional and personal lives (van Kemenade et al., 1995). Though few studies have examined affect in music students specifically, previous research has found that artists are more likely to demonstrate traits of neuroticism and emotionality (Wills & Cooper, 1988), which have been linked to positive and negative affect (Tellegen, 1985; Watson & Clark, 1984). For example, Wills and Cooper (1988) found that musicians’ mean neuroticism scores were higher than any of the mean neuroticism scores provided for various professional groups.

The relationship between satisfaction and performance anxiety has been studied in professional musicians, with findings indicating a negative relationship between career satisfaction and experiences of performance anxiety (Cooper & Wills, 1989; Levy & Lounsbury, 2011). Steptoe (1989) suggests that performance anxiety is correlated with general career stress in professional musicians. The relationship between performance anxiety, career/educational stress, and satisfaction have not, however, been studied in music students. Performance anxiety

is thought to be most prevalent in environments with high evaluative threat (e.g., auditions, juries, or master classes). Evaluations are prevalent in education and are often incorporated into the music curriculum, suggesting that performance anxiety and academic stress may also be prevalent in this context. In considering the relations found between performance anxiety and satisfaction in other domains, it is important to explore these in relation to music students' adjustment to better understand this association. Therefore, in a career marked by so much anxiety, especially within the education domain where evaluation permeates throughout the program, it is important to examine how this may relate to the satisfaction and academic stress of music students.

The previous literature is limited in its lack of a cohesive understanding of the experiences of music students. The scarce literature that is available has examined program-level factors (e.g., applied music component of program, GPA) that predict persistence within music majors (Brown & Alley, 1983; Gavin, 2010). For example, the performance aspect of an undergraduate music program seems to be an important factor in attrition within music programs. Gavin (2010) found that 57% of students cited the applied music component of the curriculum, such as vocal or instrumental technique classes, as the main reason for their withdrawal. Although these program-level factors have been examined, no coherent theory of musicians' career development has been investigated.

The current study aims to utilize social cognitive career theory (SCCT) as a framework for understanding undergraduate music majors' academic adjustment and intended persistence. SCCT helps to capture the complex relation among cognitive and behavioral factors that influence the development of career interest, choice, and performance behaviors (Lent, Brown, & Hackett, 1994). The social cognitive model of well-being, one of five SCCT models, reflects a

unifying theoretical approach to help understand the interplay of variables related to educational or job satisfaction (Lent & Brown, 2008). Sheu et al.'s meta-analysis of the SCCT interest/choice model (2010) suggested applicability of the model to Artistic theme interests and choices (based on Holland's, 1997, RIASEC codes), though the meta-analysis did not disaggregate the findings based on specific types of artistic activities, such as music. While Kuebel (2019) qualitatively examined choice, performance behaviors, and interest in elementary general music teachers through semi-structured interviews, the SCCT well-being model has not yet been studied quantitatively in music students. The well-being model is shown in Figure 1.

When applied to educational or academic domains, the well-being model contains several predictors of academic satisfaction and stress. Specifically, students are assumed to be more satisfied (and less stressed) to the extent that they make progress toward their academic goals (goal progress), have confidence in their ability at skills needed for success in their academic domains (academic-self efficacy), have optimistic beliefs about the consequences of pursuing their degree program (outcome expectations), believe they have adequate support to pursue their academic goals (environmental support), and possess beneficial personality traits and affective dispositions (e.g., high positive and low negative affectivity).

It should be noted that Lent's general model of normative well-being (2004) indexes positive domain well-being, or adjustment, in relation to both domain satisfaction and (low levels of) distress. Research on the model has sometimes focused on domain satisfaction alone and sometimes on both domain satisfaction *and* stress (e.g., Lent, Tavieria, & Lobo, 2012). Findings have indicated that academic stress and satisfaction are related to one another (Lent et al., 2012) and that self-efficacy and support were predictive of both academic satisfaction and stress (Lent et al., 2011). Positive and negative domain well-being have also been found to relate to overall

life satisfaction (Sheu et al., 2020). Domain and overall well-being have been found to correlate highly with personality variables such as extraversion and neuroticism (Diener et al., 1999) and positive affectivity (e.g., Lent, 2004; Lent et al., 2005; Sheu et al., 2020). Considering both negative and positive domain well-being helps to capture the range of music students' academic adjustment.

The well-being model has been examined not only through a multitude of cross-sectional studies, but through longitudinal designs as well, including samples of college students (Singley, Lent, & Sheu, 2010), graduate students transitioning to full-time work (Abele & Spurk, 2009), and employed adults (Verbruggen & Sels, 2010). While many of these studies have found good model-data fit, the hypothesized pathway of outcome expectations has often been observed to be weak or non-significant and has sometimes been removed from model tests. For example, Singley et al. (2010) conducted a longitudinal study of American college students, leaving out outcome expectations and finding significant temporal paths from academic self-efficacy and environmental support to goal progress and academic satisfaction.

A strength of the well-being model lies in its ability to be modified in order to incorporate unique aspects of specific careers or educational domains. The model acknowledges that domain-specific well-being and overall life satisfaction can be subject to universal predictors as well as predictors most relevant to a specific cultural group or identity status (Sheu et al., 2020). The model has been tested in general educational domains (Lent et al., 2005), assessing the academic well-being of college students in the United States as well as in a multitude of different countries, such as Portugal (Lent, Tavieria, Sheu, & Singley, 2009; Lent et al., 2012), Taiwan (Sheu, Chong, Chen, & Lin, 2014), Italy (Lent et al., 2011), and Mozambique and Angola (Lent et al., 2014). The model has been modified to include culture-specific variables, including

indicators of independent/individualistic and interdependent/collectivistic cultural orientations (Sheu et al., 2014), independent and interdependent self-constructs (e.g., Ezeofor & Lent, 2014; Sheu et al., 2016), and acculturation and enculturation (e.g., Hui et al., 2013; Ojeda et al., 2011). A meta-analysis of the culturally modified model suggests that it yields acceptable fit to the data in both academic and work domains (Sheu et al., 2020).

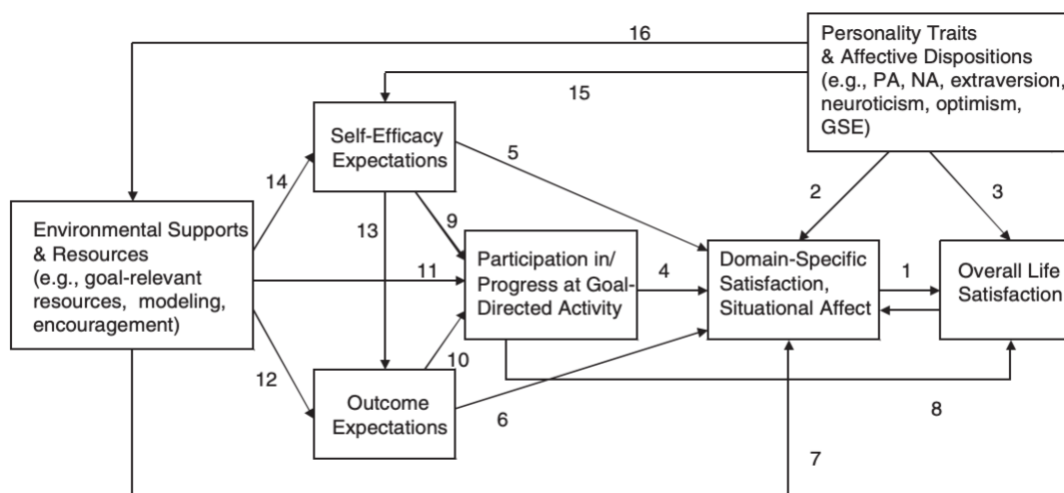
The academic well-being model has also been used to study college students in specific educational domains, such as engineering students (Lee, et al., 2015; Lent et al., 2003; Lent, et al., 2007). For example, Lent et al. (2007) found goal progress, social support, and self-efficacy to be significant predictors of the academic satisfaction of engineering students. Sheu et al.'s (2020) meta-analysis concluded that the SCCT well-being model is applicable across a variety of domains and cultural groups (Sheu et al., 2020). It is, therefore, possible that the academic well-being model may be applicable to understanding the academic functioning of music majors, though this remains to be studied.

Satisfaction may help to explain academic persistence over time (Lent et al., 2007). Academic persistence has been found to be predicted by general cognitive ability, past performance, self-efficacy beliefs, outcome expectations, and goal mechanisms (Lee et al., 2015). The academic well-being model has also been used to predict persistence intentions. For example, several studies focusing on engineering students found that self-efficacy, outcome expectations, and academic satisfaction predicted intentions to persist in the engineering major (Lent et al., 2015; Lent et al., 2013). Intended major choice persistence has also been linked to actual behavioral persistence (Lent et al., 2003). Increased self-efficacy and ability to cope with stress have been associated with greater odds of persisting and with institutional integration (Bray, Braxton, & Sullivan, 1999; Peterson, 1993; Wright, Jenkins-Guarnieri, & Murdock,

2012). Considering the high rate of dropout in music degree programs, examining intentions to persist may be a useful step toward understanding undergraduate music students' actual persistence in their degree programs.

Figure 1.

Integrative model of well-being under normal life conditions.



Note. PA = positive affect; NA = negative affect; GSE = generalized self-efficacy. 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. 500. Reprinted with permission.

Research Questions and Hypotheses

The purpose of this study was to better understand how undergraduate music majors adjust within the academic domain (where adjustment is defined by both academic satisfaction and stress level) and the social cognitive factors that predict adjustment and intended persistence as a music major. The following are the specific hypotheses derived from the SCCT well-being model as applied to music majors (see Figure 2).

Hypothesis 1: (a) Positive and negative affect directly and uniquely predict academic support.

Those who have higher positive affect and lower negative affect are more likely to perceive greater support in their academic environment.

Hypothesis 2: (a) Academic support and (b) academic self-efficacy directly and uniquely predict academic outcome expectations. Those who perceive greater environmental support and are more academically self-efficacious will have greater positive outcomes expectations.

Hypothesis 3: (a) Academic support and (b) positive and negative affect directly and uniquely predict academic self-efficacy. Those who have more academic support, higher positive affect, and lower negative affect will have higher academic self-efficacy.

Hypothesis 4: (a) Academic support, (b) Academic outcome expectations, and (c) academic self-efficacy directly and uniquely predict academic goal progress. Those who have greater support, positive outcome expectations, and academic self-efficacy are more likely to progress towards their goals.

Hypothesis 5: (a) Academic support, (b) academic outcome expectations, (c) academic goal progress (d) academic self-efficacy, and (e) positive and negative affect directly and uniquely predict academic satisfaction. Those who experience more academic support, more positive outcome expectations, higher academic self-efficacy, higher positive affect and lower negative affect, and who more readily progress towards their goals will experience greater academic satisfaction.

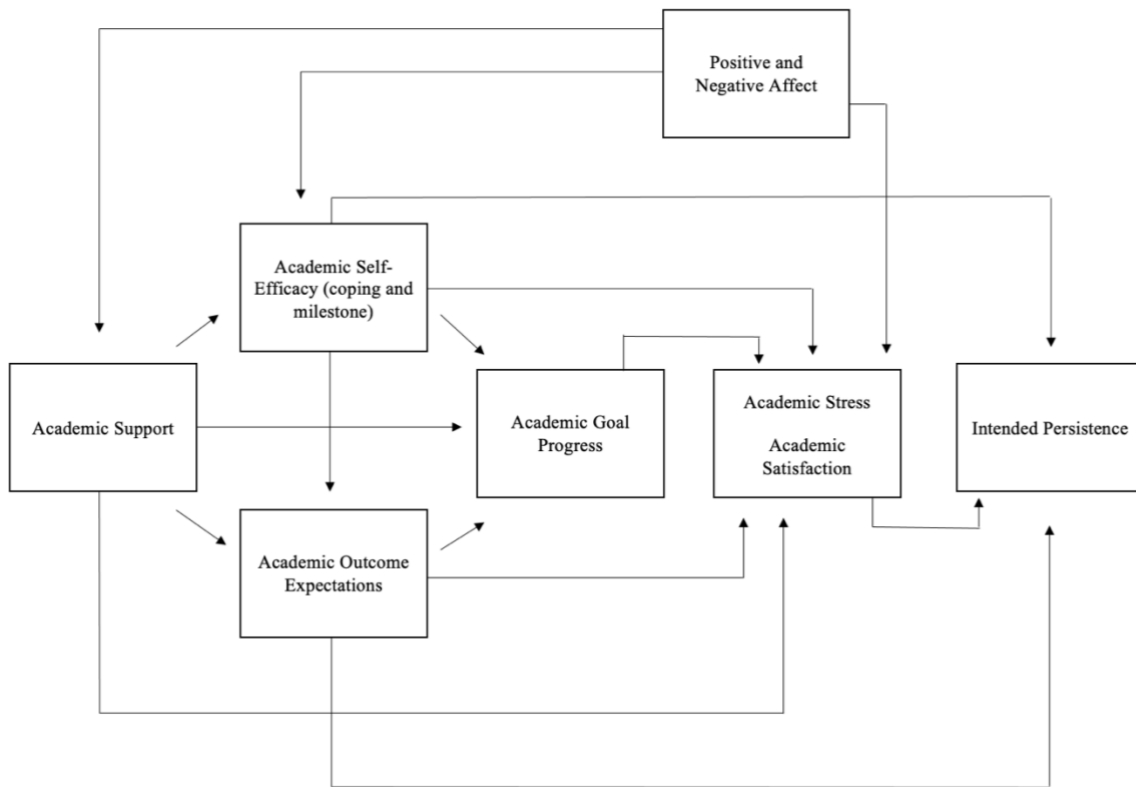
Hypothesis 6: (a) Academic support, (b) academic outcome expectations, (c) academic goal progress, (d) academic self-efficacy and (e) positive and negative affect directly and uniquely predict academic stress. Those who are more academically self-efficacious, experience more academic support, have more positive outcome expectations, have higher positive and lower

negative affect, and those who more readily progress towards their goals will experience less academic stress.

Hypothesis 7: (a) Academic self-efficacy, (b) academic outcome expectations, (c) academic stress, and (d) academic satisfaction directly and uniquely predict intended persistence. Those with higher self-efficacy, more positive outcome expectations, less academic stress, and greater academic satisfaction will be more likely to intend to persist at their music major.

Figure 2.

A social cognitive model of academic adjustment and persistence intentions in undergraduate music majors.



Method

Participants

In order for participants to be eligible to complete this study, they were required to be at least 18 years old, to be currently attending a college/university, community college, or music conservatory, and to be currently enrolled as an undergraduate music major in their second semester freshman or sophomore year. The rationale for these criteria ensures that students were of age to consent and were currently enrolled as an undergraduate music major as this was the target population. Only second semester freshmen or sophomores (of either semester) were recruited, giving students ample time to assess their capabilities in relation to environmental demands. Juniors and seniors may be less likely to drop out due to their advanced stage in their programs and the substantial educational, financial, and social commitments they have already made. The choice to include freshmen and sophomore students is similar to the criteria used in recruiting engineering students in prior SCCT research (Lent et al., 2003, 2013, 2015).

A total of 260 valid completed responses were obtained, ranging in age from 18 to 42 ($M = 20.21$, $SD = 2.66$). This sample size was considered sufficient, as it met the 200 minimum suggested sample size (Weston & Gore, 2006). Participants were students at college/university (81.1%, $n = 210$), community college (12.7%, $n = 33$), and conservatory (6.2%, $n = 16$) music programs who responded to an online survey of music students' academic adjustment. The sample included mostly male (44.8%, $n = 116$) and female (46.3%, $n = 120$) participants, with some participants identifying as transgender male (1.9%, $n = 5$), transgender female (1.5%, $n = 4$), gender non-binary/nonconforming (4.2%, $n = 11$), and "other" (1.2%, $n = 3$). Participants identified as White (73.7%, $n = 191$), Hispanic or Latino/a (10%, $n = 26$), and Asian/Pacific Islander (6.6%, $n = 17$), multiracial (4.6%, $n = 12$), Black/African American (3.9%, $n = 10$),

Native American (0.8%, $n = 2$) and “other” (0.4%, $n = 1$). Participants self-reported as having about average socioeconomic status as measured by subjective social status (on the MacArthur Scale of Subjective Social Status; Adler, 2000) ($M = 4.90$, $SD = 1.65$).

Participants’ areas of study within their music program consisted of music education (39.3%, $n = 102$), general music (20%, $n = 52$), music performance (15.3%, $n = 40$), music therapy (9.2%, $n = 24$), music production/technology/recording technology (4.25%, $n = 12$), composition (6.95%, $n = 18$), sacred music (1.93%, $n = 5$), commercial music (0.77%, $n = 2$), musicology (0.77%, $n = 2$), and conducting (.03%, $n = 1$). Participants primary instrument families consisted of strings (20.4%, $n = 53$), brass (19.2%, $n = 50$), piano (16.9%, $n = 44$), and voice (16.2%, $n = 42$). Only 23.5% of the sample reported having an additional major besides music ($n = 61$), while those individuals who did have a second major most frequently double majored in another music affiliated program (9.2%, $n = 24$). Some participants also had a minor (20.2%, $n = 52$), with more common minor concentrations being music/secondary instruments (2.7%, $n = 7$), social sciences (3.1%, $n = 8$), and language/cultural studies (3.1%, $n = 8$). Participants were asked about their likelihood of pursuit of a professional music career, with 54% of participants reporting to be “very likely” to pursue a career in music ($M = 4.33$, $SD = .90$).

Because data were gathered during the COVID-19 pandemic, participants were asked to report to what extent they felt that their quality of education had been affected by the pandemic. Only 3.9% ($n = 10$) of students reporting that the quality of their education was “not at all affected”. The remaining participants reported their education to have been “slightly affected” (20%, $n = 52$), “somewhat affected” (21.5%, $n = 56$), “moderately affected” (33.1%, $n = 86$) and

“extremely affected” (21.2%, $n = 55$) ($M = 3.48$, $SD = 1.15$). Full demographic results can be found in Table 1.

Measures

This study used the social cognitive measures developed by Lent et al. (2005) in studying the academic satisfaction of a general sample of college students. Specifically, the academic milestone and coping self-efficacy, academic outcome expectations, academic goal progress, academic support, and academic satisfaction measures were included. For each individual scale, scores were calculated by summing the item responses and dividing by the number of items. Additionally, academic stress was measured with a version of the Perceived Stress Scale (PSS), modified by Lent et al. (2009) to capture perceived academic stress. Positive and negative affect were measured with the I-PANAS-SF (Thompson, 2007), a short-form of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Measures were presented to participants in randomized order. Some items were modified and added to existing measures in order to reflect the performance aspects or academic experiences of music students. Items were reviewed by a panel of two undergraduate music students and four music educators. Suggested edits from the panel were incorporated prior to data gathering.

Academic goal progress. Academic goal progress was measured using an 11-item scale, modified from the original 7-item scale (Lent et al., 2005) to reflect the experiences of undergraduate music students. The items asked participants how much progress they feel they are currently making toward their academic goals (e.g., “learning and understanding the material in each of your courses”) along a scale from 1 (*no progress at all*) to 5 (*excellent progress*). Items including the phrase “my major” were modified to read “my music major” in the current study. The internal consistency score for this measure was estimated to be .86 in Lent et al.

(2005). Additionally, this measure has been found to correlate with measures of academic self-efficacy, outcomes expectations, goal progress, and domain satisfaction (Lent et al., 2005). It also has correlated modestly (.16) with social goal progress, providing evidence of discriminant validity (Lent et al., 2005). A test-retest reliability coefficient of .62 was reported over an eight-week interval (Singley et al., 2010) and .68 over a 15-week interval (Lent et al., 2012). Four items were added to incorporate goals related to the performance aspect of a music program (e.g., “practicing effectively for performance evaluations [juries, auditions, etc.]”). In the current study, Cronbach’s alpha was .87. The revised academic goal progress scale is shown in Appendix E.

Academic satisfaction. Academic satisfaction was measured with a 9-item scale, modified from the original 7-item academic satisfaction scale (Lent et al., 2005). This measure asked students to report how satisfied they feel with their academic experiences in music (e.g., “I enjoy the level of intellectual stimulation in my music courses”). Participants indicated their level of agreement with each statement from 1 (*strongly disagree*) to 5 (*strongly agree*). Lent et al. (2005) reported an internal consistency value of .87, additionally finding that the scale correlated with measures of positive affect, intended persistence, and overall life satisfaction. Discriminant validity was suggested by a modest correlation of .25 between this measure and a measure of social domain satisfaction (Lent et al., 2005). Singley et al. (2010) reported a test-retest reliability coefficient of .69 over an eight-week interval, while Lent et al. (2012) reported a test-retest reliability coefficient of .77 over a 15-week interval. The two additional items in the current study reflect the performance aspect of a music program (e.g., “I like how much I have been learning in my private lessons”). In the current study, Cronbach’s alpha was .81. The academic satisfaction scale is shown in Appendix F.

Academic self-efficacy. Measures of academic milestone self-efficacy and academic coping self-efficacy were included in the study (Lent et al., 2005). Academic milestone self-efficacy was measured with a modified measure of self-efficacy for completing broad academic milestones. The original 5-item scale was accompanied by two additional items, yielding an overall 7-item measure. Participants responded by indicating how confident they are in their ability to perform behaviors that are required for academic success (e.g., “excel in your intended major over the next semester”). In the current study, “your intended major” was altered to read, “your music major”. Participants indicated their confidence along a 10-point scale, ranging from 0 (*no confidence at all*) to 9 (*complete confidence*). The milestone self-efficacy scale yielded internal consistency estimates of .88 in Lent et al. (2005). The two additional items reflected confidence in ability regarding performance aspects of a music program (e.g., “complete all of your lesson and ensemble requirements effectively”).

Academic coping self-efficacy was measured with a modified 9-item measure (Lent et al., 2005). The measure, originally including 7-items, asked participants to indicate how confident they are in their ability to cope with barriers often faced by students while pursuing an undergraduate degree (e.g., “cope with a lack of support from professors or your advisor”). Participants indicated their confidence along a 10-point scale, ranging from 0 (*no confidence at all*) to 9 (*complete confidence*). The coping self-efficacy scale yielded internal consistency estimates of .85 in Lent et al. (2005). The additional two items reflected confidence in ability to cope with barriers as a music major (e.g., “find ways to overcome communication problems with private lesson instructors and ensemble directors in your lessons and ensemble requirements”). A 15-week test-retest correlation of .72 was reported in Lent et al., 2012.

Lent et al. (2005) reported that both academic milestone and coping self-efficacy were related to one another ($r = .53$) as well as to measures of academic outcomes. Additionally, discriminant validity has been determined through an appropriate correlation of .24 between both academic self-efficacy measures and the social cognitive construct of social self-efficacy (Lent et al., 2005). In the present study, academic coping and milestone self-efficacy were found to be moderately interrelated ($r = .43$). In the current study, Cronbach's alpha for coping self-efficacy was .87 and .90 for milestone self-efficacy. The academic milestone self-efficacy and coping self-efficacy scales are shown, respectively, in Appendix H and I.

Academic environmental support. Environmental support in the academic domain was measured with a modified version of the 9-item academic support measure (Lent et al., 2003). The scale asked students about their access to resources that may aid in their academic progress at the present time (e.g., “[I] get encouragement from my friends for pursuing my music major”). Participants indicated how much they agree with each statement (1 = *strongly disagree*, 5 = *strongly agree*). In this study, “intended major” was replaced by “music major”. The internal consistency estimate found in Lent et al. (2005) was .81. The scale has been shown to correlate moderately to strongly with measures of self-efficacy, outcome expectations, goal progress, and domain satisfaction (Lent et al, 2005; Lent et al., 2007). The scale has also correlated moderately with a measure of social domain support, suggesting its discriminant validity (Lent et al., 2005). Singley et al. (2010) reported a test-retest reliability coefficient of .68 over an eight-week interval. An additional 10th item was added in this study to reflect a performance aspect of academic environmental support (e.g., “[I] get helpful assistance from my private lesson instructor”). In the current study, Cronbach's alpha was .80. The academic environmental support scale is displayed in Appendix J.

Positive and negative affect. Dispositional affectivity was measured with a brief version of the Positive and Negative Affect Schedule (I-PANAS-SF; Thompson, 2007; PANAS; Watson et al., 1988). This measure asked participants to rate the extent to which they generally experience five positive (PA) (e.g., “determined”) and five negative (NA) (e.g., “afraid) feelings. Participants indicated how often they feel each emotion on a scale of 1 (*never*) to 5 (*always*). The short-form NA subscale had an internal consistency estimate of .74 and the short-form PA scale yielded an internal consistency estimate of .80 (Thompson, 2007). Correlations between the I-PANAS-SF and the original PANAS are .92 and .95 for PA and NA, respectively (Thompson, 2007). Test-retest reliability values were reported as .78 for positive affect and .76 for negative affect over a two-month period and .84 for both PA and NA over an 8-week period (Thompson, 2007).

The PA subscale has been found to correlate positively with subjective well-being (SWB; Diener, 1984) and subjective happiness (Lyubomirsky & Lepper, 1999), while the NA subscale correlated negatively with these scales. Both the PANAS and I-PANAS-SF have been used previously in tests of the SCCT well-being and other models. For example, Lent et al. (2018) found that students were likely to express academic satisfaction to the extent that they held high levels of positive affect. Additionally, PA and NA have been found to relate as expected to measures of life and domain satisfaction, academic self-efficacy, sources of self-efficacy information, and environmental supports in the SCCT literature (Lent, 2004; Lent et al., 2003, 2005, 2009, 2012, 2017, 2018; Sheu et al., 2020; Singley et al., 2010). PA and NA were found to be weakly correlated in the current study ($r = -.10$), which is typical according to previous research (Schmukle, Egloff, & Burns, 2002; Watson &

Tellegen, 1985). In the current study, Cronbach's alpha was .76 for negative affect and .65 for positive affect, with PA's internal consistency being much lower than the reported .80 in Thompson (2007). Due to PA's internal consistency rating being below the threshold of .70 in the current study (Nunnally, 1978), only the NA measure was included in hypothesis testing. The two I-PANAS-SF scales are shown in Appendix M.

Outcome expectations. Academic outcome expectations were measured with a 10-item modified version of the academic outcomes expectations scale used in Lent et al. (2005). The measure presented participants with positive outcomes that may arise from completion of an undergraduate degree, such as "receive a good job (or graduate school) offer". Participants responded to the items by indicating how much they agreed with each statement (0 = *strongly disagree*, 9 = *strongly agree*). The internal consistency estimate of this measure was .91 in the Lent et al. (2005) study. This measure has been found to correlate with academic satisfaction, environmental support, and persistence intentions (Ezeofor & Lent, 2014; Lent et al, 2015). Discriminant validity was suggested by an appropriate correlation of .34 between this scale and a measure of social outcome expectations (Lent et al., 2005). In test-retest periods of one academic semester and one academic year, reliability coefficients of .60 and .51, respectively, were reported (Lent et al., 2015).

As some items in the original scale contained expectations unlikely to be descriptive of the experiences of music majors (e.g., "go into a field with high employment demand"), the scale was revised using alternative values statements from the Minnesota Importance Questionnaire (MIQ; Rounds, Henly, Dowis, Lofquist, & Weiss, 1981). Perkman, Cevik, and Alkan (2012) found that pre-service music teachers most often value achievement and autonomy. Therefore, two items were replaced with a value statement reflecting each of these categories (e.g., "Do

work that makes use of my abilities and talents”). In the current study, Cronbach’s alpha was .87. The modified academic outcome expectations scale is displayed in Appendix K.

Intended persistence. Students’ intentions to persist at their music major were measured using a 5-item modified version of the original 4-item intended persistence scale (Lent et al., 2003). In the scale, participants were asked to report their level of agreement with statements about their persistence intentions (e.g., “I plan to remain enrolled in the school of engineering over the next semester”), ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). For the current study, “school of engineering” was replaced by “my music major”. The additional item (“I intend to complete performance requirements [e.g. juries] of my major”) reflects the performance aspect of music students’ academic programs. The scale’s internal consistency was estimated at .95 in two previous studies (Lent et al., 2003; Lent et al., 2007). In test-retest periods of one academic semester and one academic year, reliability coefficients of .62 and .58 were reported, respectively (Lent et al., 2015).

Intended persistence has been found to have medium to strong correlations with academic domain social cognitive measures (Lent et al., 2005). Intended persistence has also been found to be strongly related to behavioral persistence (Lent et al., 2003). For example, actual persistence in engineering after six semesters was well predicted by earlier reports of intended persistence (Lent et al., 2016). In the current study, Cronbach’s alpha was .85. The intended persistence scale is shown in Appendix G.

Perceived stress scale. Academic stress was measured with the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983), which was modified by Lent et al. (2009) to link stress experiences to academics. The measure asks participants to reflect on their thoughts or feelings within the past month (e.g., “How often did you feel that academic difficulties in your

music major were piling up in such a way that you could not overcome them?”). Participants indicate their responses from 1 (*never*) to 5 (*very often*). For the purpose of this study, the originally modified “in your major” was altered to “in your music major”. Consistent with Lent et al. (2009), two items were reversed coded such that higher total scores reflected less perceived stress.

College and postgraduate students are the most commonly studied population in PSS psychometric studies (Lee, 2012). A test-retest reliability coefficient of .70 was found over a 15-week interval (Lent et al., 2009). Cohen et al. (1983) found that PSS correlated with indicators of general distress (e.g., depression) and physical problems. Additionally, an internal consistency estimate was found to be .75 and .76 in two studies by Lent et al. (2009) with a Portuguese sample. The PSS has been previously used to reflect college adjustment (e.g., Aspinwall & Taylor, 1992) and has been found to be correlated with the College Student Life-Event Scale (CLSES; Cohen et al., 1983). In the current study, Cronbach’s alpha was .67, lower than previous internal consistency estimates for this measure (Lent et al., 2009). Due to a failure to meet the internal consistency threshold of .70 (Nunally, 1978), this scale was not included in hypothesis testing. The PSS is displayed in Appendix L.

Demographics. After participants completed the above measures in randomized order, they were presented with demographic questions regarding their age, gender identity, race/ethnicity, and geographic region. Questions regarding their status as music students were also included, such as their major instrument, their concentration within their program (e.g., music education, music performance), the type of music program they were enrolled in (conservatory, college/university, community college program), and any additional majors or minors in which they were enrolled. The demographic items are shown in Appendix D.

Procedure

The study used a correlational descriptive design. After receiving Institutional Review Board approval, a Qualtrics online survey was created to gather the data. Participants (freshman and sophomore undergraduate music majors) were recruited in two ways. First, participants were recruited through advertising on the social media sites Reddit and Facebook targeting specific online groups geared towards undergraduate music majors (e.g., “Music Therapy Students/Interns Community” Facebook page, “r/violinist” Reddit page) and professional music organizations with student participation (e.g., National Association for Music Education, Music Teachers National Association). Permission of group moderators was first obtained. Second, professors and department chairs of a variety of music programs across the U.S were contacted via email and were asked to forward the survey to their students. The sample advertisements and requests to post are displayed in Appendices A and B.

The link available through social media and email correspondence directed interested students to a site where they could obtain more information about the study. Those who wished to participate were asked to indicate whether they were (a) at least 18 years old and (b) enrolled as a first- or second-year undergraduate music major at a four-year institution, community college, or conservatory. If the interested individuals met these requirements, they were directed to a consent page explaining the nature of the study. Participants could withdraw from the study at any time by closing their browsers. Finally, participants indicated their consent by selecting the statement, “I agree to the above terms and wish to participate in the study”. Participants were entered into a raffle for a small financial incentive (one \$10 Amazon gift card per every 10 participants) upon completion of the survey. Winners were chosen via a random number generator. A copy of the consent form is available in Appendix C.

Steps were taken to prevent bot responses and to reduce inattention. First, respondents had to complete a Captcha question before beginning the survey. The “Prevent ballot box stuffing” option was selected to prevent multiple responses from the same respondent. Additionally, two validity checks were added to the survey to help screen out participants who responded carelessly to the survey. The two validity items were embedded within the middle and end of the survey (e.g., “This is a control question. Please select “disagree” and move on”). Failing either validity question resulted in the participant being removed from the study.

Results

The Qualtrics survey for the study was accessed by 903 individuals. Responses were removed based on the following criteria: those individuals who did not consent to participate ($n = 4$), who did not pass both validity checks ($n = 596$), who did not meet the time threshold requirement for the study (at least 240 seconds) ($n = 153$). Some participants accessed the survey but had an extreme amount of missing data (more than half); some made it no farther than providing consent. This phenomenon was primarily accounted for by filtering participants who did not pass the validity checks ($n = 596$). After accounting for all of the above criteria, 303 participants remained. From these responses, participants who had displayed patterns of straight-lining, zigzagging, and/or typing nonsensical responses into open ended questions ($n = 42$) were removed. After these criteria were accounted for ($n = 261$), one case remained which included a significant amount of missing data. This case was deleted, eliminating the need to manage missing data through other means (Manly & Wells, 2015; Rubin 1987). The remaining data set containing complete responses ($N = 260$) was deemed sufficient based on Weston and Gore's (2006) sample size recommendations.

Preliminary analyses. Modified scales were only intended to be used in hypothesis testing analyses if they yielded adequate psychometric properties (e.g., internal consistency reliability estimates $\geq .70$, theory-consistent correlations with more established scales). Correlations between the measures were generally theoretically consistent. The scales produced internal consistency estimates that ranged from marginal to excellent (.65-.90). Positive affect ($\alpha = .65$) and perceived stress ($\alpha = .67$) failed to meet the internal consistency threshold of .70 (Nunally, 1978) and were therefore not used in hypothesis testing, which involved observed

scale scores. The data were also examined for score normality and multicollinearity to ensure their appropriateness for the hypothesis testing analyses.

The predictor and criterion measures have generally been treated as reflecting unidimensional constructs in prior research on the SCCT well-being model. Because of the unique nature of the present sample (i.e., undergraduate music students) and the fact that some of the measures had been slightly modified for this study, each of the modified measures was subjected to exploratory factor analysis (EFA) to examine their dimensionality. (An EFA was not completed for academic stress, negative affect, or positive affect, as they were not modified from previous studies.) The EFAs were computed using principal axis factoring and oblimin rotation. Scree plots and factor interpretability criteria were used to determine factor structure.

Persistence intentions was found to have a 1-factor solution, with four items yielding factor matrix loadings between .68 and .83. An analysis of self-efficacy items indicated support for a 2-factor solution, labeled (a) coping self-efficacy and (b) milestone self-efficacy, as was proposed and tested in the study. The seven milestone self-efficacy items yielded pattern matrix results between .54 and .89, while coping self-efficacy yielded pattern matrix results between .61 to .84, both with minimal cross-loadings.

Academic satisfaction was initially found to have 2 factors (7 items and 2 items). The second factor (2 items) did not produce an acceptable reliability estimate (.68), providing rationale for deleting the second factor and suggesting a one factor solution for academic satisfaction with pattern matrix results yielding between .47 and .75, with minimal cross-loadings. Academic support also yielded 2 factors (8 items and 2 items), though the second factor (2 items) did not yield an acceptable reliability estimate (.69), rationalizing the deletion of this factor. Pattern matrix results for the 8-item academic support factor ranged from .40 to .70.

An analysis of outcome expectation items indicated support for a 2-factor solution, labeled (a) intrinsic outcomes (5 items; pattern matrix loadings between .44 and .92; 48.12% of the variance) and (b) extrinsic outcomes (4 items; pattern matrix loadings between .42 and .81; 11.67% of the variance). The subscales were strongly correlated (.62). One item (“Increase my sense of self-worth”) cross-loaded on both factors (the difference in loadings is less than .15) and yielded a loading under .40, suggesting possible removal of this item.

An analysis of goal progress yielded a 2-factor solution, labeled (a) general academic progress (5 items; pattern matrix loadings between .40 and .81; 47.15% of the variance) and (b) music specific progress (3 items; pattern matrix loadings between .86 and .65; 12.81% of the variance). The subscales were strongly correlated (.60). One item (“studying effectively for your exams”), cross-loaded onto both factors with a difference in loading less than .15 and failed to meet the threshold of .40 in the pattern matrix.

Means, standard deviations, skewness, and kurtoses for the social cognitive and outcome variables are reported in Table 2. The scores of four variables – milestone self-efficacy, outcome expectations, academic satisfaction, and persistence intentions – were observed to be kurtotic and/or negatively skewed (absolute values > 1) and were subsequently transformed using a log₁₀ transformation and re-reflection (Tabachnick & Fidell, 2013). Additionally, though the mean age for the sample was 20.21 (*SD* = 2.66; range = 18 to 42), some participants reported their age to be higher than is typical for a traditional undergraduate student, with eight participants between 25 to 29 years old, four between 30 and 39, and one participant reporting their age to be 42 years old. In order to examine whether age helped to explain students’ academic experiences as music majors, age was added as a control variable in multiple regression analyses predicting each of the

model variables. The results indicated that age did not yield a significant beta weight in any of the analyses ($p > .01$). Older participants were, therefore, retained in the path analysis.

The bivariate correlations for the SCCT variables are presented in Table 3. Correlations between the variables were consistent with previous SCCT studies, with small-to-large significant relations between core SCCT variables. Self-efficacy was conceptualized as a multi-dimensional construct, with coping and milestone self-efficacy hypothesized to be separate but related constructs as found in previous studies (Lent et al., 2005). The moderate correlation between these two variables ($r = .43$) is similar to previous SCCT studies ($r = .53$; Lent et al., 2005). Milestone self-efficacy correlated highly with goal progress (.70), persistence intentions (.73), and academic satisfaction (.59), suggesting that confidence in one's ability to meet academic milestones is strongly related to perceived progress at one's academic goals, intentions to persist as a music major, and satisfaction with one's academic experience. Correlations among the other variables included in model testing ranged between $-.12$ (intentions and negative affect) and $.57$ (academic satisfaction and goal progress).

Path analysis. The fit of the data to the model shown in Figure 3 was tested using the MLM estimation procedures of Mplus 8.5 (Muthén & Muthén, 2020; Muthén & Muthén, 1998-2019) and a path analysis with observed variables. Beta weights were examined to assess the unique contribution of each predictor to the equation, while R -squared reflected the amount of variance in a dependent variable that was accounted for by a set of predictors. According to Hu and Bentler's (1999) two-index criterion, model fit may be considered adequate if SRMR values $\leq .08$ in combination with CFI values $\geq .95$ or RMSEA values $\leq .06$. Based on this criterion, the path analysis yielded indications of good model-data fit, as judged by the pairing of SRMR = .02 and CFI = .99; RMSEA = .07, $\chi^2(5, N = 260) = 12.07, p < .05$.

Path coefficients are displayed in Fig. 3. Consistent with SCCT, negative affect was found to significantly predict academic support ($R^2 = .12$) (H1). Academic support and milestone self-efficacy were found to be jointly predictive of academic outcome expectations ($R^2 = .37$) (H2), though coping self-efficacy was not found to account for unique variance in outcome expectations. Negative affect and academic support were found to be jointly and individually predictive of academic milestone self-efficacy ($R^2 = .15$) (H3). Negative affect but not academic support explained significant variance in academic coping self-efficacy ($R^2 = .15$) (H3).

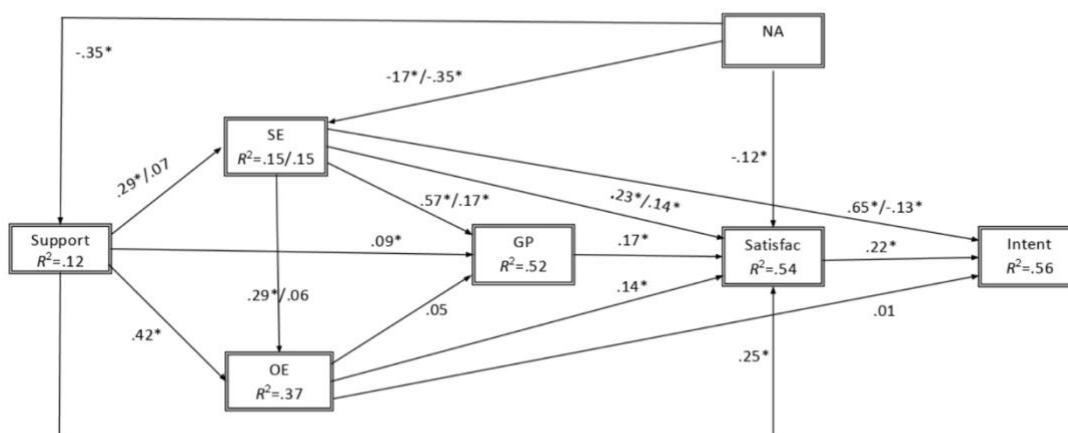
Goal progress was significantly predicted by milestone self-efficacy, coping self-efficacy, and support ($R^2 = .52$) (H4), though not by outcome expectations. Consistent with hypotheses, academic satisfaction was significantly predicted positively by both forms of self-efficacy, outcome expectations, support, and goal progress, and negatively by negative affect ($R^2 = .54$) (H5). Finally, intentions to persist as a music major was predicted positively by academic milestone self-efficacy and academic satisfaction, though not by outcome expectations ($R^2 = .56$) (H6). Contrary to expectations, the path from coping self-efficacy to persistence intentions was negative, though the bivariate correlation between these two variables had been positive. This pattern suggests that statistical suppression may have been at play (Tzelgov & Henik, 1991), with coping efficacy serving to enhance the relation of milestone self-efficacy to persistence intentions.

In addition to the target model, an alternative model was tested that added direct paths from goal progress and support to persistence intentions. These additional paths were based on the assumptions that, in addition to the other direct predictors of intended persistence, such intentions may be promoted directly via (a) access to others who support one's educational goals and (b) perceptions that one is making good progress toward those goals. Like the target model,

the alternative model yielded good fit to the data, SRMR = .02, CFI = .99, RMSEA = .08, χ^2 (3, $N = 260$) = 8.55, $p < .05$. It did not, however, offer significantly better fit than the target model, $\Delta \chi^2$ (2, $N = 260$) = 3.20, $p = .20$, and neither of the two additional direct paths was statistically significant. Thus, the target model may be seen as an adequate and parsimonious representation of the relationships among the variables.

Figure 3.

Model of wellbeing as applied to the academic satisfaction and persistence intentions.



Note. Value before slash is for AMSE; value after slash is for coping efficacy

* $p < .05$, 1-tailed.

Discussion

The current study addressed a theoretical and practical need to better understand the academic adjustment of undergraduate music majors, an important part of a volatile and competitive career path with high levels of drop-out. Testing the predictions of the well-being model aided in determining the usefulness of social cognitive factors in understanding the

adjustment of undergraduate music majors. Measures in this sample produced internal consistency estimates that ranged from marginal to excellent (.65-.90), with marginal measures removed before hypothesis testing. Bivariate correlations between SCCT variables were consistent with previous SCCT studies, with small to large, significant relations between the core SCCT variables, supporting the validity of the revised measures in this sample of undergraduate music majors. Overall, the path analysis model as applied to the academic satisfaction and persistence intentions yielded adequate fit to the data, with the majority of direct effects and relations among the predictors found to be consistent with path sequences and relationships posited by the model. These findings suggest that this adaptation of the SCCT well-being and choice models may offer a useful framework from which to study the academic satisfaction and persistence intentions of music majors.

Most of the hypothesized direct relations of the predictors to the criterion variables were statistically significant: academic support was predicted by negative affect; academic outcome expectations were predicted by academic support and milestone self-efficacy; academic milestone self-efficacy was predicted by negative affect and academic support; academic coping self-efficacy was predicted by negative affect; goal progress was predicted by milestone self-efficacy and coping self-efficacy; academic satisfaction was predicted by negative affect, support, milestone self-efficacy, coping self-efficacy, outcome expectations, and goal progress; and persistence intentions were predicted by milestone self-efficacy, coping self-efficacy, and academic satisfaction. Generally, these results were in line with previous studies of the well-being model in college students in the US. For example, variance accounted for in academic satisfaction in our model (54%) was similar to that of Sheu et al.'s (2020) meta-analysis of the well-being model (51%).

Contrary to predictions, however, outcome expectations did not yield significant direct paths to goal progress or persistence intentions, though it did yield a significant path to academic satisfaction. This pattern in which outcome expectations serves less consistently as a direct predictor in the social cognitive model has been noted in other model tests, with mixed findings on the direct relationship between outcome expectations and academic satisfaction (Ezeofor et al., 2014; Ojeda et al., 2001; Lent et al., 2007; Lent et al., 2005). For example, Ezeofor et al. (2014) found that outcome expectations were predictive of both goal progress and academic satisfaction, while Lent et al. (2005) found that outcome expectations were predictive of neither of these variables. In fact, some previous studies have chosen to remove outcome expectations from hypothesized models prior to model tests altogether (Singley et al., 2010). Meta-analytic findings do, however, support the predictive utility of outcome expectations relative to both goal progress and academic domain satisfaction (Sheu et al., 2020).

Though academic support was found to be predictive of outcome expectations, milestone self-efficacy, academic satisfaction, and persistence intentions, it was not uniquely predictive of coping self-efficacy. Lent et al. (2005) also found a lack of relationship between environmental supports and self-efficacy (milestone and coping) expectations. Though theoretically, perceived support may promote coping beliefs, this was not the case in this sample. The meta-analysis by Sheu et al. (2020) indicated that support was significantly linked both to self-efficacy and goal progress, though the meta-analysis did not, unfortunately, examine whether these relations were moderated by type of self-efficacy (e.g., academic milestone or coping efficacy) or support (e.g., general academic vs. major-specific support) measures.

Coping self-efficacy failed to yield a significant direct path to outcome expectations, though it did yield significant paths to goal progress, satisfaction, and intended persistence. In

comparing the two types of self-efficacy in the current sample, it seems that having confidence in one's abilities to meet academic milestones was more predictive of the criterion variables than was confidence in coping with specific academic obstacles. It is possible, however, that ability to cope with these obstacles, such as the social environment of one's program, may be experienced differently in the midst of the online and hybrid modes of study that were in effect at the time of data collection. It is possible that the coping challenges captured in the measure were viewed by students as less salient in an online environment than would have been the case under more typical living and learning conditions.

A visual comparison of the path coefficients in the current model test with those of Sheu et al.'s (2020) meta-analysis of the SCCT well-being model in the academic suggested that most coefficients were in the same general range. For example, support was similarly predictive of outcome expectations in the current study (.42) and in Sheu et al. (.38). Similar path coefficients were also found for academic support-self-efficacy (.32 in the meta-analysis; .29 for AMSE in the current study), AMSE-outcome expectations (.29 in the current study; .27 in the meta-analysis), and AMSE-goal progress paths (.52 in the meta-analysis, .57 in the current study). Thus, on balance, the predictive utility of the model with music students was comparable to that found with a more general population of students, suggesting that the model's predictions are largely applicable to music students, despite their distinctive academic experiences.

Overall, the findings of the present study suggest that the SCCT well-being model can be a useful framework for understanding undergraduate music majors' academic satisfaction and intentions to persist through their academic program. It also advances the research literature on music majors by being one of a few theory-based studies of well-being in performing artists, especially within an academic domain. Additionally, the study examined relatively malleable

precursors of academic satisfaction and persistence intentions that could inform interventions to increase the academic adjustment and persistence of music students in the future.

Limitations and Directions for Future Research

The study's limitations should be noted. One limitation was the choice of a cross-sectional design, limiting the ability to make causal inferences and likely leading to overestimation of parameters because of the failure to take autoregressive paths into account. Use of longitudinal models, especially cross-lagged designs, could lead to more accurate understanding of the temporal interplay among the predictors and dependent variables. A second limitation was the use of path analysis with observed variables. A test of the model at the latent variable level would allow control for measurement error and reconsideration of the two variables removed prior to hypothesis testing, positive affect and academic stress. Third, this study did not specifically test for indirect effects, instead emphasizing direct effects of the model test.

Fourth, the measures were all self-report and were intended to be completed by individual music majors, leading to concerns about mono-method and mono-source bias. Fifth, the study is subject to self-selection bias. Undergraduate music majors were recruited through social media, which may have appealed more to music majors who are passionate about their current degree program, who are connected to professional organizations and community groups, and who highly value their identity as musicians (Griffith et al., 2019). Therefore, participants who are more self-efficacious about their music capabilities, receive more environmental support, are more satisfied with their majors, or who intend to persist in their program may have been more likely to self-select to be a part of this study. Although recruitment through music professors and program directors was also used to mitigate this phenomenon, those students who responded to

the requests from their professors and directors may also be more connected to their music programs and identities.

Considering demographics, the sample consisted of primarily White/European (73.7%) students. It would be important for future studies to include more diverse samples in terms of race/ethnicity, socioeconomic status, and other individual difference dimensions that may distinguish students who enter and persist within the performing arts. It is also important to consider that gender differences in music have been studied in terms of the gendering of instruments (Adler & Harrison, 2004) and the lack of representation of female musicians in professional music settings (Valenzuela, Codina, & Pestana, 2020). Future SCCT research might, therefore, also explore gender identity in relation to music majors' academic/career development and well-being.

Differences in types of music training programs may also have affected the findings. For example, undergraduate music programs vary greatly in competitiveness and program curricula. Some programs are notoriously selective, while others admit many more students using much less stringent criteria. Conservatory settings provide a different educational experience than do music programs within larger colleges and universities; the former tend to focus on performance rather than other music or general education requirements, have higher competitiveness within programs, and attract students who begin their musical study earlier in life (Valenzuela, Codina, & Pestana, 2020). In fact, conservatory students have been found to have higher self-efficacy for musical learning than students in a traditional university setting (Ritchie & Williamson, 2012). It should be noted that the current sample consisted of only 6.2% conservatory music students and, thus, may not accurately represent their unique experiences.

Music programs are often further divided into such categories as general music, performance, music education, and music therapy. While these students often complete the same core music curricula, their experiences may vary within each specialization. However, the current focus on freshman and sophomore students (the years in which core music classes are often most prevalent across all music majors) may allow a focus on the common educational experiences of music majors. Findings may also be affected by students' selection of particular instruments. There are varying levels of competitiveness for those pursuing different instruments that may add additional stressors and struggles influencing the social-cognitive factors that affect these musicians. For example, an orchestra may employ 16-18 first violins but have only one pianist who plays only for selected performances. Voice majors may deal with additional stressors of vocal health and fatigue as well as intertwined personal identity, as their instrument is internal. Although care was taken to recruit a variety of different areas of study and instrument groups, the need to aggregate the data over these categories unfortunately limits the ability to study the potentially distinctive experiences of particular sub-groups of majors.

The study was also limited by its use of slightly modified social cognitive measures without the benefit of comprehensive assessment of the measures' psychometric properties. Each of the modified measures achieved adequate internal consistency reliability estimates and theory-consistent relations with other variables in the model. It would be useful to reconfirm their factorial and construct validity as well as their test-retest reliability in future research. In addition, it should be noted that two very brief, non-modified measures, positive affect and perceived stress, did not yield adequate reliability coefficients and were, therefore, dropped from the hypothesis testing analyses. Future research might employ alternative (e.g., slightly longer),

more adequate measures of these constructs (e.g., 10-item versions of the PANAS scales) in order to include them in tests of SCCT models.

An additional consideration is that students in the current sample were first and second-year students taking courses during the COVID-19 pandemic, which many of them had cited as having a significant impact on their academic experience. It is likely that they had had relatively little opportunity to experience a traditional higher education environment in music school prior to reverting to online learning and social isolation. It is unclear how much additional stress this situation added to their academic lives. Given the inability to include the stress variable in the current model testing, it would be useful to examine perceived stress in future tests of the SCCT well-being model with undergraduate music students.

Finally, it would be useful to design and test SCCT-informed interventions aimed at enhancing the academic satisfaction and intended persistence of music students. Based on the current findings, such interventions might target the social cognitive antecedents of satisfaction and persistence intentions. For example, interventions could be designed to increase self-efficacy for academic milestones (e.g., passing juries and recital requirements), with a focus on relevant sources of self-efficacy beliefs. Such experiential sources might include exposure to coping models, provision of mastery experiences (and attention to how they are processed cognitively), and efforts to reduce excessive performance anxiety (Lent et al., 1994).

Conclusion

The present study offers a first step towards examining music students' academic adjustment using an SCCT framework. In testing the hypotheses, results suggested that the SCCT well-being framework is appropriate for examining satisfaction and persistence intentions in music students. Future studies will be able to use this model to better understand the career

and academic experiences of this unique population, leading to interventions to facilitate their academic progress and to better understand the determinants of career well-being in the performing arts.

Extended Literature Review

Access to music education has become increasingly threatened in the United States in recent years, with visual and performing arts programs threatened by budget cuts in educational spheres. Funds such as the National Endowment of the Arts continue to be threatened in the National Budget. Music accessibility is unevenly distributed based on demographic factors, as only 26% of Hispanic individuals, 28% of African American individuals, and 59% of White individuals between the ages of 18-24 report having received a visual or performing arts education in childhood (Survey of Public Participation in the Arts, 2008). Variability in music accessibility and funding may reflect the fluctuating societal support for music careers exhibited in the U.S. Not only do musicians often face uncertain support from society as a whole, but they often face wavering support within familial and social circles. Many music majors are all too familiar with the statement made around the dinner table, “And what’s your backup plan?” This fluctuation of support, both from society as a whole and within their individual social circles, is one of several barriers experienced by student musicians.

Almost two percent of students enrolled in higher education are music majors (Higher Education Arts Data Services). Performing artists may have a difficult time unravelling themselves from their profession, as their career is much more than a job (Roncaglia, 2008). A performing artist’s career can be essential to the core of their personal identities, which may precipitate maladaptive patterns (Griffith et al., 2019). The person-environment fit theory hypothesizes that individuals are most satisfied with their job when they can maintain congruence between their personality and their work environment (Kristof-Brown, Zimmerman, & Johnson, 2005). Musicians fall under Holland’s category of “artistic occupations” (Holland, 1997) highlighted by these occupations’ ability to provide unstructured, flexible opportunity for

self-expression. In examining Holland's theory in music education majors (Teachout, 2001), these students often displayed a combination of artistic, social, and investigative types.

The career path of a musician is often volatile and competitive, with musicians possibly dealing with lulls in contractual jobs and completing many auditions/evaluations before booking work. Job satisfaction has been found to fluctuate more when workers change employers or occupations than when remaining in stable positions (Staw & Ross, 1985). Since musicians so often experience this lack of stability, how does this affect their well-being? Within undergraduate music programs, academic withdrawal is common, with half of music majors withdrawing from their major prior to degree completion (Gavin, 2010). Brown and Alley (1983) found that attrition rates for music education majors were between 39-62%, while that of transfer students was 31-37%. Within such a unique academic and career path, what are the social cognitive factors that act as barriers and supports in influencing students to persist through their educational paths?

Sixty percent of professional musicians report experiencing performance anxiety severe enough to affect their personal and professional lives (van Kemande, 1995). Kenny (2009) reports that low levels of stress in central life domains can lead to satisfaction with role performance, while Lent (2004) considers that domain satisfaction and affect (low levels of perceived stress) are reciprocally related to overall life satisfaction. Though studied in professional musicians (Cooper & Wills, 1989; Levy & Lounsbury, 2011), the relationship between satisfaction and performance anxiety has not been studied in music students; neither has music students' academic stress been examined beyond a single performance occasion. Kuebel (2019) used Social Cognitive Career Theory (SCCT) to qualitatively examine choice, goals, and performance outcomes of elementary music educators who studied instrumental music but did

not examine the well-being model or study the experiences of current music students. Therefore, the current study sought to better explore how social cognitive variables included in the SCCT model of well-being (social support, self-efficacy, outcome expectations, personality and affective dispositions, and goal progress) predict the academic adjustment (academic satisfaction and perceived stress) and intended persistence of undergraduate music majors.

Social Cognitive Career Theory

SCCT may be a useful framework for understanding the academic adjustment of undergraduate music majors. Originally derived from social cognitive theory, SCCT helps to capture the complex relationships between cognitive and behavioral factors that influence the development of career interest, choice, and performance behaviors (Lent et al., 1994). SCCT is currently comprised of five interrelated models of (a) academic and career interest development, (b) choice making, (c) performance and persistence (Lent, Brown, & Hackett, 1994), (d) well-being and positive adjustment (Lent, 2004; Lent & Brown, 2006, 2008), and (e) self-management (Lent & Brown, 2013). These models encompass a variety of career and educational tasks and challenges that individuals face at different points in their careers.

SCCT Model of Well-Being

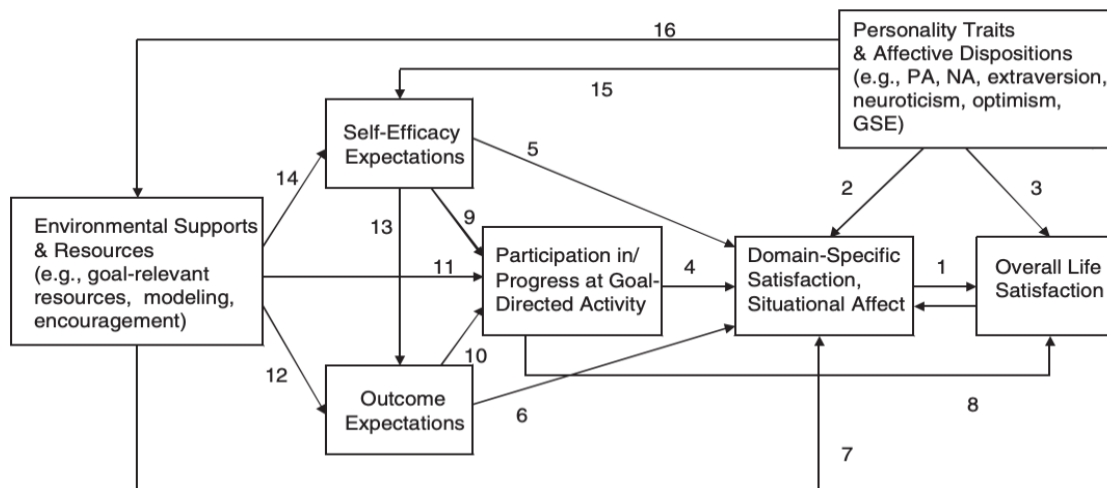
Lent (2004) expanded the original three-model theory to include a model of subjective well-being in the context of work, helping to better understand the interplay of variables contributing to academic and job satisfaction. Considering both eudaimonic (growth-seeking) and hedonic (pleasure-seeking) well-being, Lent (2004) put forth an integrated model of well-being, considering both personal growth and affective disposition as avenues to well-being. Within the well-being model, positive domain well-being, supports, and extraversion/positive affect have been studied much more frequently than negative predictors and outcomes (negative

domain well-being, barriers, neuroticism/negative affect (Sheu et al., 2020). Lent's general model of normative well-being (2004) considers positive domain well-being, or adjustment, as a function of both domain satisfaction and (low levels of) distress. Research within the educational domain has included both a measure of academic satisfaction alone to indicate students' academic well-being (Lent et al. 2005), as well as both academic satisfaction and academic stress (e.g., Lent, Tavieria, & Lobo, 2012) to encompass measures of academic adjustment, but has less frequently included measures of distress (Sheu et al., 2020).

The academic well-being model includes five variables that are seen as contributing to academic adjustment, including (a) environmental support, or contextual factors within an academic environment that influence one's ability to pursue academic goals or to build self-efficacy; (b) academic self-efficacy, confidence in one's ability to successfully meet academic milestones in one's academic program; (c) academic goal progress, the amount of progress made towards one's academic milestones; (d) academic outcome expectations, beliefs about the outcome of pursuing one's academic program, and (e) personality traits and affective dispositions, intrapersonal variables disposing an individual towards pleasant or unpleasant emotions. Those who perceive environmental support, high self-efficacy, more positive and less negative affect, and positive outcome expectations are more likely to progress towards their goals and to feel more satisfied and less stressed in their academic lives. Each of the social cognitive constructs in the model will be described below:

Figure 1.

Integrative model of well-being under normal life conditions.



Note. PA = positive affect; NA = negative affect; GSE = generalized self-efficacy. 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. 500. Reprinted with permission.

Positive and negative affect. Lent (2004) described personality characteristics as intrapersonal variables predisposing an individual towards certain emotions, behaviors, and cognitive patterns. Affective disposition captures one’s general tendencies to experience positive or negative affect across situations. These predispositions can inform both how one perceives their life domains and how they perceive their capabilities and supports (Lent et al., 2005). Both positive (PA) and negative affect (NA) have both been studied within the SCCT model (Lent, 2004; Lent et al., 2017; Lent et al., 2005, Lent et al, 2012; Lent et al, 2009; Lent et al., 2018; Singley et al., 2010. Sheu et al., 2020), though positive affect has been studied more frequently (Sheu, et al, 2020). Those college students with a tendency to experience positive affect are more likely to report greater satisfaction with life generally and in particular contexts, such as academic satisfaction (Lent et al., 2005; Lent et al. 2018; Sheu & Lent, 2008). Both PA and NA have been linked to measures of life and domain satisfaction through relations to self-

efficacy, sources of self-efficacy information, outcome expectations, and environmental supports (Lent, 2004; Lent et al., 2017; Lent et al, 2012; Lent et al, 2009; Sheu et al., 2020). For example, in a meta-analysis of the original model, positive and negative affect were found to be predictive of domain-specific and global well-being outcomes both directly and indirectly via pathways containing contextual supports, self-efficacy, outcome expectations/work conditions, and goal progress (Sheu, et al, 2020).

Academic self-efficacy. Self-efficacy in the context of work is defined as an individual's beliefs about their personal potential (Lent et al., 2005), and their ability to perform behaviors necessary to achieve work related goals (i.e., goal self-efficacy) or tasks required for success within the work environment (i.e., task self-efficacy) (Lent & Brown, 2008). Lent et al. (2005) described two aspects of academic self-efficacy, academic milestone self-efficacy (e.g. confidence in ability to perform a variety of behaviors required for general academic success) and academic coping self-efficacy (e.g. confidence in ability to cope with barriers in the academic environment). The inclusion of coping and milestone self-efficacy helps to encompass how students perceive their own academic abilities and make use of environmental resources to cope with stress in their academic programs, exercising control over their well-being. While self-efficacy is shaped by verbal persuasion, performance accomplishment, vicarious learning, and physiological states (Lent et al., 1994), performance accomplishments are generally assumed to have the greatest influence on self-efficacy beliefs (Anderson & Betz, 2001). As undergraduate music majors experience frequent performance requirements and evaluations within their program of study, they may have acquired much data from these sources in regard to their self-efficacy beliefs.

Academic outcome expectations. Outcome expectations are the anticipated consequences of pursuing one's goals (Lent & Brown, 2008), or an individual's beliefs about the likelihood of receiving particular work outcomes (Lent et al., 1994). Within the social cognitive well-being model in the contexts of work and education, outcome expectations encompass both anticipated outcomes and perception of outcomes one is currently receiving within educational or occupational settings. In considering that person-job fit is strongly related to job satisfaction (Kristoff-Brown, Zimmerman, & Johnson, 2005), one's satisfaction depends on the degree to which their work environment can provide reinforcers that are consistent with their personal work values. In an often categorized "high risk" career such as pursuit of music, a vast majority of individuals may not be rewarded in traditionally valued ways (e.g., entry into a field with high employment demand or stability). Perkman et al. (2012) highlighted the usefulness of measuring values of relevance to pre-service music teachers with the Minnesota Importance Questionnaire (Rounds, Henly, Dowis, Lofquist, & Weiss, 1981). Outcome expectations have been found to be related to other social cognitive variables such as supports and self-efficacy and have been found to directly predict domain well-being (Sheu et al., 2020).

Academic goal progress. Bandura (1986) defined goals as the intention to engage in a particular activity or to produce a particular outcome. Academic goal progress is the amount of progress currently being made either toward attaining general academic milestones or personal academic goals. Goal progress has been related to self-efficacy in its consideration as an aspect of performance accomplishment, one of the primary sources of efficacy information (Bandura, 1997). Additionally, self-efficacy and goal progress have been found to be reciprocally related (Lent, 2004). Changes in goal progress are predicted by self-efficacy and environmental supports (Lent et al., 2007; Lent et al., 2009), with stronger self-efficacy and greater access to

environmental support predicting greater progress towards personally valued goals. Making progress toward goals is thought to lead to well-being, especially to the extent that the goals are highly valued by the individual (Ryan & Deci, 2001). Goal progress has also been tested in longitudinal studies and meta-analyses, with progress towards personal goals supported as a precursor to and direct predictor of well-being (Brunstein, 1993; Eliot et al., 1997; Sheu et al., 2020).

Environmental supports. Environmental supports and barriers, such as institutional resources and interpersonal support, are contextual factors that facilitate a person's ability to achieve personal goals and foster self-efficacy (Lent, 2008). The supports and barriers may be assessed objectively or subjectively. A multitude of studies under the SCCT lens have found that environment supports predict self-efficacy in academic and work contexts (Lent et al., 2005; Lent et al., 2007; Lent et al., 2009). Additionally, environment supports have been found to predict positive affect (Watson, 2002). Supports have been found to influence academic domain well-being both in both normative and culturally modified SCCT well-being models (Sheu et al., 2020).

Academic adjustment. Academic adjustment includes measures of both positive domain-specific well-being (e.g., academic satisfaction) and negative domain-specific well-being (e.g., academic stress). Lent's 2004 general model of normative well-being called for a multicomponent view of positive adjustment, including multiple indicators of optimal functioning. Domain satisfaction and affect (e.g., low levels of perceived stress) were theorized to reciprocally relate to overall life satisfaction (Lent, 2004). This is especially salient for those individuals who consider their work as central to their identity (Sheu et al., 2020). Academic adjustment was explored with Portuguese college students in two studies (Lent et al., 2011). In

Study 1, a cross-sectional design, self-efficacy and goal progress, but not environmental support were significantly predictive of academic stress while self-efficacy and support, but not goal progress, were significantly predictive of academic satisfaction. In Study 2, a longitudinal design, environmental support predicted academic satisfaction while self-efficacy yielded a significant path to academic stress. Goal progress did not explain additional significant variance in academic satisfaction or academic stress (Lent et al., 2011).

Intended persistence. Satisfaction is not only an important outcome in itself, but has been found to be strongly related to academic persistence (Lent et al., 2007). Academic persistence is a function of the interaction among general cognitive ability, past performance, self-efficacy beliefs, outcome expectations, and goal mechanisms (Lee et al., 2015). Research has shown that actual behavioral persistence is strongly related to intended major choice persistence (Lent et al., 2003), with intention to leave one's educational or occupational setting identified as the most influential predictor of dropout rates in Bean's Model of Attrition (1980). For example, in a longitudinal study by Lent et al. (2016), actual persistence in engineering after six semesters was well predicted by earlier reports of intended persistence. Many studies have identified self-efficacy as an important variable in predicting persistence. Self-efficacy and ability to cope with stress have been found to predict persistence (Bray, Braxton, & Sullivan, 1999; Peterson, 1993). Robbins et al. (2004) found academic self-efficacy to be correlated with persistence at and commitment to obtaining a college degree. Additionally, using the lens of SCCT, Wright et al. (2012) found that increased self-efficacy for college courses was associated with greater odds of persistence and academic success.

Validity of the Academic Well-Being Model

A meta-analysis of the SCCT well-being model (Sheu et al., 2020) synthesized 100 studies of empirical findings, assessing the applicability of the well-being model across a variety of domains and cultural groups. Sheu et al. reported good overall model-data fit across samples. A strength of the academic well-being model lies in its ability to be modified in order to represent the social cognitive variables most relevant to the experiences of unique and culturally varied groups. The academic well-being model has been tested in general education domains both in the United States (Lee et al., 2015; Lent et al., 2005;) and in a multitude of different countries, such as Portugal (Lent, Tavieria, Sheu, & Singley, 2009; Lent et al, 2012), Taiwan (Sheu, Chong, Chen, & Lin, 2014), Italy (Lent et al., 2011), Mozambique, and Angola (Lent et al., 2014). Research has supported the model's predictive utility across these diverse groups. The well-being model acknowledges that domain-specific well-being and overall life satisfaction can be subject to universal predictors as well as to predictors most relevant to a specific cultural group or identity status (Sheu et al., 2020). For example, the model has been modified to include culture-specific variables including indicators of independent/individualistic and interdependent/collectivistic cultural orientations (Sheu, Chong, Chen, & Lin, 2014), independent and interdependent self-constructuals (e.g., Ezeofor & Lent, 2014; Sheu et al., 2016), and acculturation and enculturation (e.g., Hui et al., 2013; Ojeda et al., 2011). A meta-analysis of the culturally modified model suggests that the model yields acceptable fit in both academic and work domains (Sheu et al., 2020). Additionally, within the academic domain, adequate fit for the culture-modified model was found across gender, racial/ethnic groups, and U.S. and non-U.S. samples (Sheu et al., 2020).

The model has often been used in the specific educational domain of engineering (Lee et al., 2015; Lent, et al., 2003; Lent, et al., 2013, 2015; Lent, et al., 2007). In 2007, Lent et al. tested the well-being model in the domain of engineering students, finding that students experienced academic satisfaction to the extent that they felt they had made good progress at their educational goals, had strong self-efficacy for skills needed for success in engineering, and had adequate social support for their educational goals. In this model, outcome expectations, or the expected consequences of majoring in engineering, were not found to be significant.

The well-being model has been examined not only through a multitude of cross-sectional studies, but through longitudinal designs as well, using samples of college students (Singley, Lent, & Sheu, 2010), graduate students transitioning to full-time workers (Abele & Spurk, 2009), and employed adults (Verbruggen & Sels, 2010). While many of these studies suggest good model-data fit, the hypothesized pathway of outcome expectations has often been unsupported or removed from the model altogether based on previous insignificant findings (Lent et al., 2007). For example, in a longitudinal test with American college students, the model was supported overall, finding significant temporal paths from academic self-efficacy and environmental support to goal progress and academic satisfaction (Singley et al., 2010).

Academic Well-Being Model and Undergraduate Music Majors

The current literature is limited in its lack of a cohesive understanding of the experiences of musicians, with experiences of performing artists largely absent from the vocational literature. Since the academic well-being model predicts the academic experiences of students in a multitude of unique cultural and academic domains, the model may also be useful in understanding the academic experiences of music majors. In the proposed study, social cognitive

factors will be used in predicting academic adjustment (academic satisfaction and academic stress) and intended persistence to encapsulate the academic experiences of music students.

Academic stress in music students. Music students experience high levels of stress and anxiety in academic domains, with 16.5% of student musicians reporting impaired performance, 21% experiencing marked distress, and 16.1% reporting that performance anxiety had affected their careers adversely (Wesner et al., 1990). Zander et al. (2010) reported that music students experienced significantly higher psychological stresses than medical students during their first two years of study. Kenny (2009) defined music performance anxiety as a type of state anxiety in which “the experience of marked and persistent anxious apprehension related to musical performance that has arisen through specific anxiety-conditioning experiences and which is manifested through combinations of affective, cognitive, somatic and behavioural symptoms”. Steptoe (1989) suggests that performance anxiety is correlated with career stress in professional musicians, but this connection has not been made in music students. Music performance anxiety is most severe in settings where there is high ego investment and evaluative threat (Kenny, 2009). In considering that an undergraduate music program encompasses much connection to one’s identity as a musician as well as frequent evaluations in the form of auditions and juries, performance anxiety may be very prevalent at this point of a developing musician’s career. Yet, most previous literature measures performance anxiety in terms of a specific musical performance, instead of obtaining a broader understanding of stress and anxiety of musicians.

Affective dispositions and music majors. Music has generally been related to affective states; soothing classical music has been found to affect college students under stress, relieving negative affect and enhancing positive affect (Chi, 2020; Ye, 2020). Few studies have examined positive (PA) and negative (NA) affect in relation to music students (Ginsborg et al., 2009;

Kreutz et al., 2009; Panebianco-Warrens et al., 2015), finding that undergraduate music students displayed similar or above average ranges of values for positive affect (with negative affect being opposite) when compared to other student populations. Affect relates to other aspects of music students' well-being. For example, high positive affect and low negative affect were found to moderate the relationship between general self-efficacy and health promoting behaviors (e.g. physical activity, nutrition) in conservatory music students (Kreutz et al., 2009)

PA and NA correspond to personality factors of extraversion and neuroticism, respectively (Tellegen, 1985; Watson & Clark, 1984). Previous research has found that artists are more likely to demonstrate traits of neuroticism and psychoticism (Wills & Cooper, 1988), traits which are “inherently linked” to stress and anxiety (McCrae & Costa, 1999). Wills and Cooper found that musicians' mean neuroticism scores were higher than any of the mean neuroticism scores of various other professional groups (Eysenck & Eysenck, 1975). High levels of neuroticism may be related to stress faced by musicians, as neuroticism scores may increase when an individual is experiencing stress (Suls, 2001). Previous research has found significant correlations between neuroticism and music performance anxiety (Steoptoe, 1989). Perfectionism (e.g., the desire to perform at an exceptionally high-level while being excessively critical of one's efforts (Hewitt & Flett, 1990)) has also been widely studied in musicians, with findings indicating that perfectionism is related to negative affect, performance anxiety, and occupational strain, and low goal satisfaction (Kenny et al., 2004; Mor et al., 1995), but also to adaptive motivation dynamics (Herrera et al., 2021). Those musicians who score higher on measures of self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP) are more likely to experience performance anxiety and feel less satisfied about their goal accomplishment, moderated by perceived personal control (Mor et al., 1995). The relationship

between perfectionism and music performance anxiety has also been found to be related to age, with the relationship increasing during early adolescence until the end of formal music education (Patston and Osborne, 2016).

Persistence in music majors. About half of undergraduate music majors withdraw from their degree program prior to degree completion (Gavin, 2010). The most commonly cited reason for withdrawal from music education programs was related to the applied music component (i.e. performances, juries) of the curriculum, with 57% of students reporting this as the reason for their withdraw and 29% of those who withdrew unwillingly doing so based on applied music juries (Gavin, 2010). In a longitudinal study, the best predictors of music education majors' persistence were music performance-related variables (Dudd, 1978). The experiences of conservatory musicians specifically have been conceptualized from the lens of self-determination theory (SDT), hypothesizing that program dropout is linked to lack of students' psychological need fulfillment (Evans, 2013). While information has been collected to better understand the program level factors that may cause withdrawal in music majors, there is no available research on the social cognitive factors that may influence intended persistence in music majors.

Satisfaction in music majors. Satisfaction has not been well explored in music students. Considering profession musicians, prior research shows that satisfaction may be related to music performance anxiety within a musician's career. A qualitative study by Cooper and Wills (1989) found that the more performance anxiety a musician experienced, the less satisfied they were with their jobs. Satisfaction has also been studied in relation to performance anxiety with marching artists in a bugle, drum, and colorguard corps (Levy & Lounsbury, 2011), with variance in satisfaction accounted for by Big Five personality traits and performance anxiety.

Self-efficacy in music majors. Self-efficacy has been found to be a salient predictor of achievement in music performance (McCormick & McPherson, 2003). As musicians enter into music programs as college students, their self-efficacy has been informed by a multitude of data from personal and vicarious performance experiences, which influence their beliefs about themselves as musicians. For example, students who engaged in more private lesson and ensemble involvement in childhood had high self-efficacy during the time of career interest development (Kuebel, 2019). Music majors have been found to display significantly less general coping self-efficacy in comparison to other students, such as those majoring in health-related fields (Ginsborg et al., 2009). Music students have higher self-efficacy in learning than performing music (Ritchie & Williamson, 2012), possibly connected to the high levels of dropout due to performance aspects of music programs (Gavin, 2010). Not only does self-efficacy affect students' satisfaction, but it can also affect actual performance, with positive correlations existing between music performance self-efficacy and assessor ratings of performance quality (Ritchie & Williamson, 2012). Self-efficacy may also be related to actual and intended persistence in musicians. Previous research has found that more efficacious music educators tend to be more committed to their professions (Prichard, 2017).

Self-efficacy and music performance anxiety. Self-efficacy has been found to be most affected by performance accomplishments (Anderson & Betz, 2001). Another source of self-efficacy is physiological state (Lent et al., 1994). Research suggests that music performance anxiety is related to a multitude of physiological reactions, suggesting a possible connection between the physiological reactions derived by performance anxiety and one's self-efficacy in the performance domain. Further, theory supports a connection between performance anxiety and self-efficacy beliefs, as a given strategy for fostering self-efficacy beliefs is the management

of performance anxiety (Lent & Brown, 2008). Additionally, Orejudo et al. (2017) found a correlation between general self-efficacy and music performance anxiety in high school and college music students. Previous studies conceptualize music performance anxiety in relation to a specific performance, whereas a goal of the current study was to better understand the overall stress experience of musicians in an academic domain.

Gender differences in music majors. Musical expression has been historically gendered, with music instruments being bracketed as more appropriate for either men or women (e.g., flute and voice for women, trumpet and trombone for men) (Adler & Harrison, 2004). Previous research has suggested gender differences and stigma within music students as well, finding that, although women are prevalently study music, they are not predominately represented in professional settings (Valenzuela, Codina, & Pestana, 2020), calling for a better understanding of the satisfaction and persistence intentions of female musician's. Female music students have been found to experience more prevalent general anxiety and performance anxiety compared to their male counterparts (Papageorgi, Creech, & Welch, 2013). Finally, research has also suggested that women in conservatory music programs had lower perceived competence than male students (Valenzuela, et al., 2020), conceptualized as connected to female student's high self-demands and subsequent great gap in their self-perceived and ideal skill levels.

Context of COVID-19. It is also important to consider the impact that the COVID-19 pandemic has had on the academic lives of music students. COVID-19 has been found to be associated with increased anxiety and moderate to severe stress in undergraduate students generally (Husky et al., 2020) and to have negatively impacted music students specifically, in the context of perceived mood, physical wellbeing, quality of education process, professional and personal relationships (Habe et al., 2021). While undergraduate students widely had difficulty

transitioning to fully online or hybrid learning during COVID-19, with 78.4% of students reporting discomfort with online classes (Raj & Fatima, 2020), this transition was especially difficult for students in hands-on programs, such as music majors. Music teachers acknowledged several barriers created by the transition such as deficits in live performance, ensemble music, posture, technical performance, intonation, interpretive performance, and the quality of sound production. These barriers were reported to have interrupted the integrity of music learning, making learning more demanding, less effective, physically strenuous, and unhealthy (Simunovi, 2020). This period of educational disruption may not only have an effect on the satisfaction of students in current programs, but on their career choices, professional development and training, and satisfaction long-term.

Summary

This literature review suggests the need for a more unified understanding of the factors affecting the experiences of undergraduate music majors. The SCCT well-being model was introduced as a framework for better conceptualizing the academic adjustment of undergraduate music majors. Previous research using this SCCT well-being model was summarized and relevant research applying social cognitive variables to musicians was reviewed, forming a foundation for the current study, in which goodness of fit for the model hypothesized model was found.

Table 1.*Demographic Information Samples (N = 260)*

Variable	%	n
Age		
18	18.5	48
19	30.8	80
20	21.9	57
21	8.5	22
22	10	26
23	3.1	8
24+	6.6	17
Gender Identity		
Female	46.3	120
Male	44.8	116
Non-Binary / Nonconforming	4.2	11
Transgender male	1.9	5
Transgender female	1.5	4
Other	1.2	3
SES		
[Subjective Social Status]	10	3
	9	11
	8	33
	7	71
	6	56
	5	36
	4	30
	3	15
	2	4
	1	0
Race / Ethnicity		
White / European American	73.5	191
Hispanic / Latinx American	10.0	26
Black / African American	3.8	10
Asian / Pacific Islander American	6.5	17
Multi-racial	4.6	12
Native American	.8	2
Other	.4	1

COVID-19	Not at all affected	3.8	10
Education	Slightly affected	20	52
Impact	Somewhat affected	21.5	56
	Moderately affected	33.1	86
	Extremely affected	21.2	55
COVID-19	Not at all affected	23.1	60
Career Impact	Slightly affected	20.8	54
	Somewhat effected	21.5	56
	Moderately effected	22.7	59
	Extremely effected	11.6	30
	Program Type	College/University	81.1
	Community College	12.7	33
	Conservatory	6.2	16
Pursuit of Pro. Music Career	Not at all likely	1.5	4
	Unlikely	2.7	7
	Unsure	11.5	30
	Likely	29.6	77
	Very Likely	54.2	141
Area of Study	Music Education	39.3	102
	General Music	20.0	52
	Music Performance	15.3	40
	Music Therapy	9.2	24
	Music Production/Technology	4.25	12
	Composition	6.95	19
	Sacred Music	1.93	5
	Commercial Music	0.77	2
	Musicology	0.77	2
	Conducting	0.03	1
Students with Second Major	One major only	76.2	198
	Double major	23.5	61
Double Majors	Addit. Music Affiliation	9.2	24
	Math	1.9	5
	Other Visual/Performing Arts	1.5	4
	English/Literature	1.2	3
	Language/Cultural Studies	.8	2
	Social Sciences	.4	1

	History/Political Science	.8	2
	Non-Music Education	.4	1
	Business	.8	2
	Physical Science	1.2	3
	Technology/Computer Sciences	1.2	3
	Other	.8	2
Minors	Language/Cultural Studies	3.1	8
	Social Sciences	3.1	8
	Addit. Music Affiliation	2.7	7
	History/Political Science	1.9	5
	Non-Music Education	1.5	4
	Other Visual/Performing Arts	1.2	3
	Business	.8	2
	Physical Science	.8	2
	Math	.4	1
	Technology/Computer Sciences	.4	1
	Other	.4	1
Primary Instrument	Strings	20.4	53
	Brass	19.2	50
	Piano	16.9	44
	Voice	16.2	42
	Woodwinds	9.2	24
	Percussion	5.8	15
	Digital Software	5.0	13
	Other	4.2	11

Table 2.*Descriptive Statistics for Measurement Development Sample (N = 260)*

Variable	<i>m</i>	<i>SD</i>	<i>a</i>	<i>Skewness</i>	<i>Kurtosis</i>		
Milestone Self-Efficacy	8.30	1.43	.90	-1.23	(.15)	-.28	(.30)
Transformed Milestone SE	1.58	.23	--	-.03	(.15)	-.75	(.30)
Coping Self-Efficacy	6.90	1.51	.87	-.40	(.15)	.03	(.30)
Outcome Expectations	7.95	1.23	.87	-.97	(.15)	1.22	(.30)
Transformed OE	1.48	.18	--	.10	(.15)	-.29	(.30)
Satisfaction	4.16	.54	.81	-1.20	(.15)	3.35	(.30)
Transformed Satisfaction	1.43	.12	--	-.16	(.15)	.03	(.30)
Perceived Stress	3.19	.79	.67	-.09	(.15)	-.28	(.30)
Support	3.94	.59	.80	-.59	(.15)	.51	(.30)
Goal Progress	3.84	.63	.87	-.41	(.15)	-.12	(.30)
Negative Affect	2.63	.83	.76	.40	(.15)	-.06	(.30)
Positive Affect	3.43	.67	.65	-.34	(.15)	.76	(.30)
Intentions	4.51	.60	.85	-1.79	(.15)	5.14	(.30)
Transformed Intentions	1.56	.15	--	-.76	(.15)	-.17	(.30)

Note. Transformed OE = Outcome Expectations transformed with reflection/Log 10

transformations and re-reflection

Transformed Milestone SE = Milestone Self-Efficacy transformed with reflection/Log 10

transformations and re-reflection

Transformed Satisfaction = Satisfaction transformed with reflection/Log 10 transformations and re-reflection

Transformed Intentions = Intentions transformed with reflection/Log 10 transformations and re-reflection

Table 3.*Bivariate Correlations Between SCCT Variables (N=260)*

Variables	1	2	3	4	5	6	7	8	9	10
1. Goal Progress	--									
2. Coping SE	.44**	--								
3. Support	.35**	.19**	--							
4. Satisfaction (transformed)	.57**	.44**	.53**	--						
5. Intentions (transformed)	.56**	.25**	.30**	.55**	--					
6. Milestone SE	.70**	.43**	.35**	.59**	.73**	--				
7. OE (transformed)	.40**	.26**	.53**	.52**	.39**	.46**	--			
8. PSS	.43**	.36**	.33**	.47**	.30**	.48**	.28**	--		
9. Positive Affect	.49**	.36**	.10	.30**	.18**	.38**	.21**	.36**	--	
10. Negative Affect	-.30**	-.38**	-.35**	-.41**	-.12	-.27**	-.29**	-.51**	-.10	--

Note. ** indicates that a correlation is significant at the .01 level (2-tailed)

Appendix A

Sample Advertisements

Note: Alternate Image with comparable content may be used



Are you a freshman or sophomore

UNDERGRAD MUSIC STUDENT?

interested in participating in a study about the academic adjustment of music students?

VISIT THE LINK BELOW

Complete the survey and enter to win a \$10 gift card!

The advertisement features a dark blue background with a photograph of a young woman with brown hair playing a violin. The text is overlaid on the image. At the bottom, there are stylized red violin silhouettes on a dark blue background.

Appendix B

Requests and Post for Social Media Site Groups

In-site message to be sent to social media moderators to recruit participants:

Subject: Posting a research opportunity for undergraduate music majors?

Message: Hello! I am a part of a research team based of the College of Education at the University of Maryland, and I studied voice as an undergrad. We're conducting a study (approved by the UMD IRB) on the academic experiences of freshman/sophomore music majors in the U.S. Participants will fill out a 10-minute survey which asks about their experiences as an undergraduate music major. Participants be entered to win a raffle for a \$10 Amazon gift card. Would it be okay if we post the survey to your [board/page/etc]?

Post to Social Media Group members (to be used on forum based social media websites, e.g. Reddit):

Title: Are you a freshman/sophomore music student? Participate in a University of Maryland study for music majors and be entered into a raffle for a \$10 gift card! [Not spam - Post received prior approval by mods]

Post: We are researchers from the University of Maryland, and we are conducting a study on freshman/sophomore music majors. The study consists of a 10-minute online survey about

academics experiences of music majors. If you are 18 or older and a freshman/sophomore student attending college in the U.S., we want you! Participants will be entered to win a raffle, where one \$10 gift certificate will be awarded for every 10 research participants. If you qualify and are interested, please click here: [Link]

Thanks for considering participation! Your responses may help future undergraduate music students.

Appendix C

Informed Consent Form

Project Title:

Predicting Undergraduate Music Majors' Academic Adjustment and Persistence

Intentions

Purpose of the Study:

This research is being conducted by Emily Cygrymus, BA and Robert Lent, PhD from the College of Education at the University of Maryland, College Park. We are inviting you to participate in this research project because you: (a) are at least 18 years old, (b) are an undergraduate student, and (c) are a freshman or sophomore music major.

The purpose of this research is to ask about the academic adjustment of undergraduate music students. Experiences specific to music students, such as experiences in private lessons and ensembles will be measured. These measures will help us to examine factors that influence music students' academic adjustment.

Procedure:

This study consists of a 10-minute survey. The survey will ask you how you feel about your academic experiences as a music major. The survey contains various statements that ask you to rate the extent to which each apply to you.

Compensation:

As a result of your participation, you will be eligible to participate in a drawing where one \$10 gift card will be awarded for every ten research participants.

Confidentiality

You will not be required to provide any information that may link your identity to your survey responses. We will do our best to minimize any potential loss of confidentiality. The data will be collected via an online survey provider and stored in the survey provider's database, which is only accessible with a password. Once the information is downloaded from the online survey provider, it will be stored in a password-protected computer. Any reports based on the survey information will only present the results in aggregate form (e.g., group averages). Individual survey responses will never be reported.

Right to Withdraw and Questions

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time by closing your browser. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please feel free to contact the investigator(s):

Emily Cygrymus at emilycyg@umd.edu

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3207 Benjamin Building,

University of Maryland, College Park, MD 20742

(301) 405-2878

Participant Rights

If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:

University of Maryland College Park

Institutional Review Board Office

1204 Marie Mount Hall

College Park, Maryland, 20742

E-mail: irb@umd.edu

Telephone: 301-405-0678

This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.

Statement of Consent

By selecting your choice below you are indicating your right to consent or not consent electronically.

Selecting “Yes, I Consent” and clicking on the “Continue” button below indicates that you are (a) are at least 18 years old, (b) are an undergraduate student, (c) are a freshman or sophomore (d) have read and understand the terms of this study and thus voluntarily agree to participate.

If you do NOT wish to participate in this study, please select “No, I DO NOT Consent” and click “Continue” to decline participation.

1. “Yes, I Consent”
2. “No, I DO NOT Consent”

Appendix D

Demographics Questionnaire

Please provide the following demographic information:

Age

1. [text]

Gender

1. Female
2. Male
3. Gender Variant/Non-Conforming
4. Other [text]
5. Prefer not to say

Race/Ethnicity

1. Black or African American
2. Hispanic American or Latino/a
3. White or European American
4. Asian/Pacific Islander American
5. Native American
6. Multiracial
7. Other [text]

Instructions: Think of this ladder as representing where people stand in the United States.

At the **top** of the ladder are the people who are the best off – those who have the most money, the most education, and the most respected jobs. At the **bottom** are the people who are the worst

off – those who have the least money, least education, the least respected jobs, or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

Where would you place yourself on this ladder?

Please place a large “X” on the rung where you think you stand at this time in your life relative to other people in the United States.

10

9

8

7

6

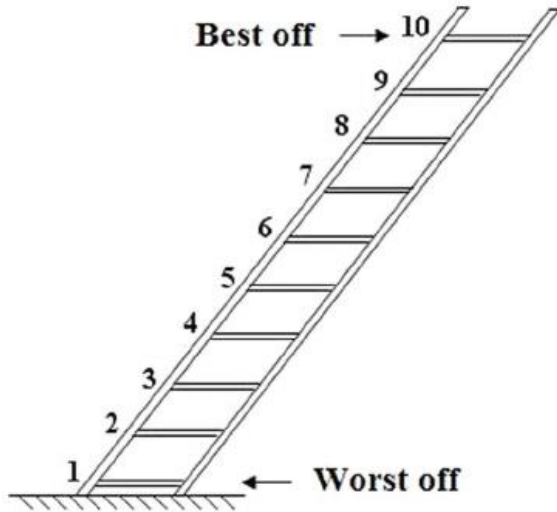
5

4

3

2

1



What is your major instrument?

1. [text]

What is your major area of study within the music department?

1. General Music
2. Music Education
3. Music Therapy
4. Music Performance
5. Composition
6. Sacred Music
7. Other [text]

What type of music program are you enrolled in?

1. Conservatory
2. Community College
3. College/University

How likely are you to pursue a professional music career (graduate music program, professional musician, music therapist, music educator, etc)?

1. Not at all likely
2. Unlikely
3. Unsure
4. Likely
5. Very likely

How has the quality of education in your music program been affected by COVID-19?

1. Not at all affected
2. Slightly affected
3. Somewhat affected
4. Moderately affected
5. Extremely affected

How has your choice to pursue a music career been affected by COVID-19?

1. Not at all affected
2. Slightly affected
3. Somewhat affected
4. Moderately affected
5. Extremely affected

Appendix E

Academic Goal Progress Scale

Instructions: Now we would like for you to rate each of the same goal statements in terms of how much progress you are making toward each one at this point in time. That is, indicate how effectively you feel you are meeting or working toward each goal at present, regardless of how important the goal is for you.

How much progress are you making toward each of these goals at this point in time (i.e., so far this semester:

1- *No Progress at all*, 2 - *A Little progress*, 3 - *Fair progress*, 4 - *Good progress*, 5 - *Excellent progress*

1. Excelling at your **music** major
2. Completing all course assignments effectively
3. Studying effectively for all of your exams
4. Remaining enrolled in your **music** major
5. Completing academic requirements of your **music** major satisfactorily
6. Achieving / maintaining high grades in all of your courses
7. Learning and understanding the material in each of your courses
- 8. Completing all of your lesson and ensemble assignments effectively**
- 9. Practicing effectively and adequately for performance evaluations (juries, auditions, etc)**
- 10. Completing performance requirements of your major satisfactorily**
- 11. Learning the pieces in each of your lessons and ensembles**

Appendix F

Academic Satisfaction Scale

Instructions: Using the scale below, indicate your level of agreement with each of the following statements.

How much do you agree or disagree with the following statements:

1- *Strongly Disagree*, 2 - *Disagree*, 3 - *Undecided*, 4 - *Agree*, 5 - *Strongly Agree*

I feel satisfied with the decision to major in **music**

2. I am comfortable with the educational atmosphere in my major field

3. For the most part, I am enjoying my coursework

4. For the most part, I am enjoying my lessons and ensembles

5. I am generally satisfied with my academic life

6. I enjoy the level of intellectual stimulation in my **music** courses

7. I feel enthusiastic about the subject matter in my music major

8. I like how much I have been learning in my classes

9. I like how much I have been learning in my private lessons

Appendix G

Intended Persistence

Students indicate level of agreement with statements about their academic intentions.

1- *Strongly Disagree*, 2 - *Disagree*, 3 - *Undecided*, 4 - *Agree*, 5 - *Strongly Agree*

1. I intend to remain enrolled in my **music** major over the next semester

2. I intend to remain enrolled in my **music** major over the next year

3. I intend to excel in my **music** major

4. I intend to complete the upper level required courses in my **music** major with an overall G.P.A of B or better.

5. I intend to complete performance requirements (e.g. juries) of my major.

Appendix H

Academic Milestone Self-Efficacy Scale

Instructions: The following is a list of major steps along the way to completing an undergraduate degree in music. Please indicate how much confidence you have in your ability to complete each of these steps in relation to the academic major that you are most likely to pursue. Use the 0-9 scale below to indicate your degree of confidence.

0- *No confidence at all*, 1, 2, 3, 4, 5- *Some confidence*, 6, 7, 8, 9- *Complete confidence*

How much confidence do you have in your ability to:

1. Remain enrolled as a **music** major over the next semester
2. Remain enrolled as a **music** major over the next two semesters
3. Excel as a **music** major over the next semester
4. Excel as a **music** major over the next two semesters
5. Complete the upper level courses in your **music** major with an overall grade point average of B or better
- 6. Complete performance requirements of your major satisfactorily**
- 7. Learn the pieces in each of your lessons and ensembles**

Appendix I

Academic Coping Self-Efficacy Scale

Instructions: Here we are interested in knowing how well you believe you could cope with each of the following barriers, or problems, that students could possibly face in pursuing an undergraduate degree. Please indicate your confidence in your ability to cope with, or solve, each of the following problem situations.

0- *No confidence at all*, 1, 2, 3, 4, 5- *Some confidence*, 6, 7, 8, 9- *Complete confidence*

How confident are you that you could:

1. Cope with a lack of support from professors or your advisor
2. Complete a degree despite financial pressures.
3. Continue on in your intended major even if you did not feel well-liked by your classmates or professors.
4. Find ways to overcome communication problems with professors or teaching assistants in your courses
5. Balance the pressures of studying **and practicing** with the desire to have free time for fun and other activities.
6. Continue on in your intended major even if you felt that, socially, the environment in these classes was not very welcoming to you
7. Find ways to study effectively for your courses despite having competing demands for your time
- 8. Find ways to overcome communication problems with private lesson instructors and ensemble directors in your lessons and ensemble requirements**

9. Find ways to engage in effective practice strategies despite competing demands for your time.

Appendix J

Academic Support

Instructions: Many factors can either support or hinder students' academic adjustment. Here we are interested in learning about the types of situations that may support your progress in your intended major. Using the 1-5 scale, please indicate how much you agree or disagree with each of the following statements.

1- *Strongly Disagree*, 2 - *Disagree*, 3 - *Undecided*, 4 - *Agree*, 5 - *Strongly Agree*

At the present time, I...

1. Have access to a “role model” (e.g., someone I can look up to and learn from by observing) in my **music** major
2. Feel support from important people in my life (e.g., teachers) for pursuing my **music** major
3. Feel that there are people “like me” in this academic field
4. Get helpful assistance from a tutor, if I felt I needed such help
5. Get encouragement from my friends for pursuing my **music** major
6. Get helpful assistance from my advisor
7. Feel that my family members support the decision to major in **music**
8. Feel that close friends or relatives would be proud of me for majoring in **music**
9. Have access to a “mentor” who could offer me advice and encouragement
- 10. Get helpful assistance from my private lesson instructor**

Appendix K

Academic Outcome Expectations Scale

Instructions: Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements.

0-9 Scale, *Strongly Disagree, Disagree, Unsure, Agree, Strongly Agree*

Graduating with an undergraduate degree in music from my current institution will likely allow me to...

1. Receive a good job (or graduate school offer)
2. **Try out some of my own ideas while in my music program**
3. Get respect from other people
4. Do work that I find satisfying
5. Increase my sense of self worth
6. Have a career that is valued by my family
7. Do work that can “make a difference” in people’s lives
8. **Do work that makes use of my abilities and talents**
9. Do exciting work
10. Have the right type and amount of contact with other people (i.e. right for me)

Appendix L

Perceived Stress Scale (PSS)

Instructions. The questions in this scale ask about your feelings and thoughts during the last month.

1 - *Never*, 2, 3 - *Sometimes*, 4, 5 - *Very Often*

How often have you felt or thought this way *during the last month...*

1. How often did you feel that you were unable to control the important things in your academic life as a music major?
2. How often have you felt confident about your ability to handle your academic problems in your music major?
3. In the last month, how often have you felt that things in your music major were going your way?
4. How often did you feel that academic difficulties in your music major were piling up in such a way that you could not overcome them?

Appendix M

The International Positive and Negative Affect Schedule Short Form (I-PANAS-SF)

Question, Measure, and Item Order

Question: Thinking about yourself and how you normally feel, to what extent do you generally feel:

Items in order:

Upset

Hostile

Alert

Ashamed

Inspired

Nervous

Determined

Attentive

Afraid

Active

Interval measure: never 1 2 3 4 5 always

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