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An Examination of Chinese Undergraduates' Contemplativity and Academic Stress

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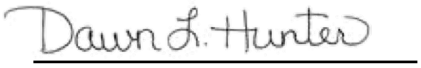

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ABSTRACT

An Examination of Chinese Undergraduates' Contemplativity and Academic Stress

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China has advanced considerably in many fields, which has led to fierce competition among its people. College students are no exception as this competition has brought tremendous academic stress that affects academic performance. Western scholars and researchers found contemplative practice (CP) was helpful to reduce students' educational stress and improve their study performance. However, no literature was found regarding the potential impact of CP on undergraduates in China, nor was any literature discovered concerning potential differences between genders or academic emphases on students' conceptions of CP and collegiate stress. The purpose of this study was to fill the gap by (a) exploring possible relationships among Chinese undergraduates' contemplativity, academic stress, and GPA, and (b) examining potential differences between genders and academic emphases on Chinese undergraduates' contemplativity and academic stress. Data were collected on the Scale of Contemplative Practice in Higher Education (SCOPE) and Educational Stress Scale for Adolescents (ESSA). Correlations and mean differences among variables were analyzed using the Pearson product-moment correlation coefficient, an independent samples *t* test, and Cohen's *d* effect size. The results showed participants with higher scores regarding contemplativity reported less academic stress. The outcomes of the correlational and mean difference analyses among other variables were not statistically significant. The results are discussed with regard to future research and implications for educational practice.

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
CE	Contemplative education
CP	Contemplative practice
TE	Transformative education
SCOPE	Scale of Contemplative Practice in Higher Education
ESSA	Educational Stress Scale for Adolescents
IFS	Internal family systems therapy

CHAPTER 1: INTRODUCTION

With the development of the economy and the growth of the world population, resources have become scarce, resulting in some fierce competition among people across the globe (Ozaki & Johnston, 2008). University undergraduate students are no exception. Competition can lead to stress in many aspects, including academic stress for college students (Chen & Yao, 2006) and in particular minority students (Hanassab & Tidwell, 2002; Wilton & Constantine, 2003). Lee (2015) found many undergraduates experienced considerable stress without access to a wide range of scholarships or financial assistance. In turn, having to work part-time to pay their tuition has deprived students of the time they could otherwise spend engaging in their academic work. This situation also gives rise to stress in their scholarly environment.

Efforts to reduce stress have been slowly recognized and valued widely across the United States. Kabat-Zinn (2003) started a program that aimed to offer intensive contemplative training to aid people with stress. Shortly afterward, an increasing number of contemplative practices (CPs) were developed and applied to facilitate learning processes in the Western world, especially in the United States.

Statement of the Problem

Huan et al. (2008) reported that college students experience a wide range of social and physical stressors. Bjorkman (2007) found the pressures from learning competition have contributed to various mental and behavioral problems, including personal distress, self-injury, and suicide. Among the many forms of stress, academic stress is a serious threat to students' health worldwide. Research has demonstrated the condition is worse in some Asian countries (e.g., China, Japan, South Korea) because Asian students tend to be burdened with higher expectations but lower satisfaction with regard to scholarly achievement and, as such, these

populations may suffer more learning stress than their counterparts in the United States (Ang & Huan, 2006a; Ang et al., 2007; Lee & Larson, 2000).

Awareness of the burden on students stemming from academic work at schools in China is growing. The China Youth Social Service Center (2008), a national survey, reported nearly 70% of students believed that pressures associated with submitting assignments before the due date and passing a series of examinations were the biggest pressures in their lives. Li and Zhang (2008) and Liu and Tein (2005) warned academic-related elements like underachievement, anxiety from many and various quizzes and tests, and too much homework might put Chinese students at risk of having poor mental health. Lin and Chen (1995) cautioned that stress from a heavy study workload might result in physical violence and emotional difficulties.

Purpose of the Study

Scholars and researchers have long studied the effects of contemplation-based interventions in the United States and discovered these practices are "at best positive or minimally effective" (Chadwick & Gelbar, 2016, p. 106) on students' well-being, academic achievement, and social competence (Barbezat & Bush, 2014; Waters et al., 2015). The purpose of this study was threefold: (a) to explore potential associations among Chinese undergraduates' perceptions regarding their use of CP, their perceived academic stress, and their GPA; (b) to investigate potential differences in Chinese undergraduates' use of CP between genders and between study emphases (education vs. business); and (c) to examine potential differences in Chinese undergraduates' perceived academic stress between genders and between study emphases.

Research Questions

Terrell (2016) defined the research question as making the study's purpose statement specific and concrete by aiming attention on what the researcher tries to comprehend. Terrell also explained that research questions stem from the purpose statement. This study sought to answer the following research questions:

RQ1. Is there a relationship between Chinese undergraduates' contemplativity and their academic stress?

RQ2. Is there a relationship between Chinese undergraduates' cumulative GPA and their contemplativity?

RQ3. Is there a relationship between Chinese undergraduates' cumulative GPA and their academic stress?

RQ4. Is there a difference in contemplativity between female Chinese undergraduates and male Chinese undergraduates?

RQ5. Is there a difference in contemplativity between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

RQ6. Is there a difference in academic stress between female Chinese undergraduates and male Chinese undergraduates?

RQ7. Is there a difference in academic stress between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

McMillan (2016) explained research questions should specify the variables. In my case, the variables (i.e., contemplative practices, perceived academic stress, and GPA) are clear in the research questions. As this was an exploratory, descriptive study, no hypotheses have been generated for the research questions (Terrell, 2016).

Significance of the Study

Overall, the literature has supported the benefits of CP on students in the United States (Barbezat & Bush, 2014; Brady, 2007; Zajonc, 2006). However, relatively few empirical studies have probed the positive or negative effects of CP among college students in China. Given that China is the world's most populous country and has experienced tremendous transformation in almost every field during its development, fierce competition is unavoidable. This competition causes potentially overwhelming anxiety and pressure among its people (Chen & Yao, 2006), especially among college students. CPs have been shown to reduce stress in the Western world; therefore, there is a need to study and explore their potential influence on Chinese college students.

Definitions

Contemplative education (CE) is defined as "a set of practices that may foster particular forms of awareness in students, forms conducive to the conscious motivation and regulation of learning, and also to freedom and transcendence in life more generally" (Roeser & Peck, 2009, p. 119).

Contemplative practice (CP) concerns the state of staying awake, being there, being present-focused, listening attentively, creating a condition for being aware, and developing an internal life by one's attention to the current moment (O'Reilly, 1998).

Contemplativity (noun) is defined in this dissertation as the state or quality of one's contemplative practices.

Summary and Organization of the Dissertation

Chapter 1 introduced the background of college students experiencing educational stress and the physical and mental consequences of the stress. The significance of the study for Chinese

students and definitions of the key terms were also presented in the chapter. Chapter 2 reviews the literature concerning the seven research questions posed in the study. A brief history of the CP literature and research results are summarized and discussed in this chapter. Chapter 3 introduces the instruments and data collection procedures for data analyses. Chapter 4 presents data analysis procedures, methods used to address the seven research questions, and the results of the analyses. The final chapter discusses the results in relation to the literature, the study limitations, and directions for prospective research and practice.

CHAPTER 2: LITERATURE REVIEW

The literature review will provide a brief history and discussion of the theory of contemplative practice (CP) by introducing a range of definitions from a general overview of the literature. Then, the history and background of contemplative education and CP are delineated, followed by a depiction of contemplative education (CE) and CP's evolution. Next, the intersection between CE and transformative education (TE) is discussed. After presenting the relationship between CE and TE, the literature review will address the importance of CP for student development and outcomes by reviewing the effects of CP based on 16 empirical studies. The limitations section will reveal the lack of relevant studies of CP in China. Finally, implications will stress the potential benefits of CP for Chinese college students.

Brady (2005) defined CP as "the act of attending with nonjudgmental awareness or being open to things just as they are" (p. 1). According to Roeser and Peck (2009), CP may enable students to form self-awareness helpful to the management of learning, and this practice is conducive to flexibility in addressing life's problems and fulfillment in life. Roeser and Peck added that contemplative education realized by CP is aimed at nurturing personal and social development via the stimulation and support of consciousness and strong will in an environment that emphasizes ethics. Morgan (2015) stated, "this contemporary and ancient history traces the continuing presence of the contemplative in education which indicates that CP is an essential aspect of who we are and how we learn" (p. 197). The Center for Contemplative Mind in Society (2009) defined CP as a method that quiets the mind, allowing greater concentration while developing greater personal insights. Barbezat and Bush (2014) stated CPs in tertiary education are influential approaches to transform the way we teach and learn; awareness derived from CPs "can help to create a more just, compassionate, and reflective society" (p. XII). Chano (2012)

defined CE as learning integrated with awareness, the ability to focus on the present, and empathy for others via the practice of rumination and other CPs. Jennings (2008) stated that CP makes the mind fully prepared to deal with messages in different ways and simultaneously enables students to discover their true identities. CE questions and improves conventional academic methods to address learning and teaching; through CE, students are provided with the ability to integrate their learning with their heart and mind (Grossenbacher & Parkin, 2006).

Historical Roots of Contemporary Contemplative Education

The story of CE dates back to ancient times (Stock, 1998, 2006). CE originated from ancient religious praxes. Then, secluded and dedicated nuns and monks in archaic Greece of 500 BCE and India of 200 BCE inherited the praxes, which further developed into the modern-day CP through religious transmissions in the West. Stock (2006) argued that classical Greek philosophy gave birth to contemporary science of reasoning and experimental methodology and served as a cradle for contemplation and spirituality to grow. Stock further argued there were spiritual and mindful aspects of the Greek tradition in philosophy because it involved various meditative issues consisting of self-awareness by metaphysical or spiritual practice.

According to Hart (2004), a researcher and scholar of contemplation, elements related to CP were born and fostered in spiritual traditions for a continuous history of thousands of years. Hart delineated the historical roots of the spiritual and sacred organizations, which facilitated the exercises applied in CE. These exercises were comprised of

> (a) Buddhist meditation, (b) forms of yoga from Hinduism, (c) Christian prayer, (d) radical questioning through dialogue by Plato, (e) the self-inquiry of Ramana Maharishi, (f) meta-physical reflection from the Sufi tradition that leads to a deeper intuitive vision

of the mind, and (g) the absorbed contemplation recommended in the Jewish Kabbalah. (Hart, 2004, p. 29)

Similarly, contemplative exercises can be traced in a wide range of patterns in the past experiences of Indigenous Americans, Australians, religious believers such as Buddhists, Jews, Christians, and Muslims (Repetti, 2010). Repetti (2010) emphasized the impact of Asian institutions on ancient and current CE. Repetti stated that institutions in Asia had long experienced contemplative exercises, research, instructional methods, and thoughts integrated "from the classical era to the present" (p. 6). Poceski (2012) stated Chinese Buddhism laid the theoretical and empirical foundation for the significance of CP in Asian wisdom, which evolved in Buddhism in classical India and Taoist temples in ancient China. Stock (2006) stressed that ancient philosophy harbored or embraced the origins of contemporary contemplative education that connected with the whole person.

Three Phases of Contemplative Education's Evolution

Contemplative education evolved through three distinct phases in the United States (Morgan, 2015). The first phase originated in ancient Eastern religious traditions; to be specific, Chinese immigrants introduced Buddhism ideologies to the United States in 1840. The next phase was initiated "in the late 1960s and early 1970s" (Morgan, 2015, p. 197) with the founding of three important universities (i.e., the American Academy of Asian Studies, the Maharishi University of Management, and Naropa University) that engaged philosophies and praxes of contemplation. The establishment of the Center for Contemplative Mind in Society in the mid-1990s symbolized the arrival of the third phase, which was represented by five growing impacts. Table 1 describes in chronological order these growing impacts on the recent rise of the Western CE.

Table 1

Summary of Five Developmental Factors in the Present Reoccurrence of Contemporary Contemplative Education in the West

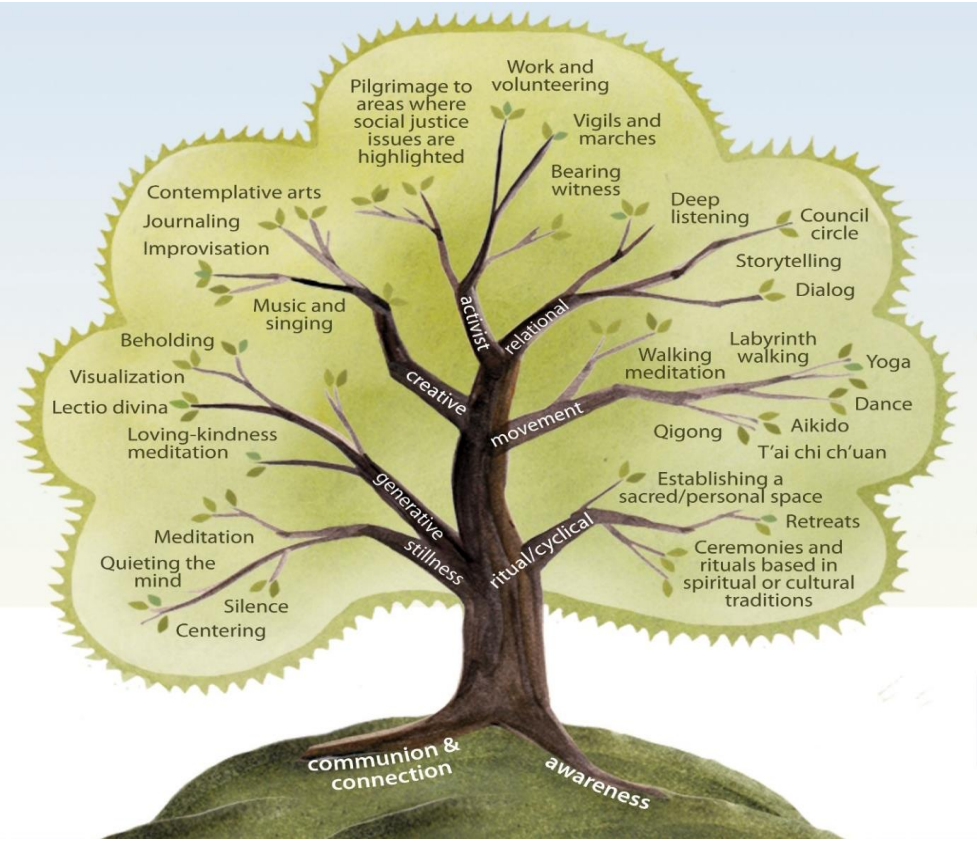
Primary influences	Supporting literature (author, year)	Main ideas, historical events, or figures
Hindu and Tibetan Buddhist theory and practice	Bush (2010) and Repetti (2010)	Chinese immigrants brought about Hindu and Buddhist doctrines to the U.S. where those religious ideologies were then consolidated through the founding of the three representative universities (i.e., the American Academy of Asian Studies, the Maharishi University of Management, and Naropa University)
Transpersonal psychology	Bush (2010)	American philosopher and psychologist William James published the *Principles of Psychology* in 1890 which symbolized the onset of the modern day CE.
Psychology, sport psychology, business-related meditation research and medication	Hart (2008) and Repetti (2010)	Scholars and researchers of contemplation often cited literature in the fields of medication, psychology, and meditation study related to business, all of which investigated the mindful state of awareness. Jon Kabat-Zinn, a professor of medicine, founded the clinic that aimed at decreasing stress by mindfulness exercises. Mindfulness was considered one form of contemplative practice.
Dissemination of Yoga across the western society	Singleton and Byrne (2008)	Yoga has been popular in many parts of the world. It multiplied exponentially in the last three decades which has led to global transmission of its contemplative nature. Three prominent forms: Iyengar System, Ashtanga Yoga, and Krishnamacharya Yoga Mandiram in Chennai.
Meditation research in relation to cognitive and neuroscience	Hart (2008) and Repetti (2010)	An increasing number of contemplative theorists and practitioners have referenced and used findings and results from areas of cognitive and neuroscience. Neuroscientists started to research CP because they believed CP could partly facilitate the inquiries into awareness.

Barbezat and Bush (2014) remarked that instructional methods associated with CP are characterized with reflection and retrospection by which undergraduates are better able to practice self-inquiry in their lessons. Various forms of CP can be incorporated into classrooms. These practices range from supervised introspection drills to flexible and multi-staged contemplative readings to simple moments of just being tranquil. A focus on personal awareness unites these practices, which might lead to a clearer understanding of oneself.

To provide a clear picture, the tree of CP (see Figure 1) designed by the Center for Contemplative Mind in Society exhibited many and various forms of CP. Interestingly, the tree roots, branches, and leaves were all used to represent the foundation, classifications, and the specific CP that grow from the branches of classifications, respectively. According to Barbezat and Bush (2014), those categorized CP can be regrouped, relying on the "context, the intent and the facilitators' skills. For example, meditation can be combined with freewriting or journaling, or a movement exercise can be combined with activist activities" (p. 11).

Figure 1

Tree of Contemplative Practices



Note. This picture shows a tree of CP. From The Center for the Contemplative Mind in Society, n.d. (www.contemplativemind.org). Reprinted with permission.

Interconnection and Intersection Between Contemplative and Transformative Education

In this section, many transformative practices will be introduced and analyzed in relation to contemplative practices. Transformative education stems from the transformative learning theory of Jack Mezirow (Morgan, 2015). Mezirow (1991) suggested that learning is how learners interpret and reinterpret their perceptions and experiences, and the process of interpretation is the process of constructing meaning. Barbezat and Bush (2014) posited that CPs are powerful methods to transform teaching and learning. CE and TE are intercorrelated, as Morgan (2015) stated, "Relevant here are the parallels between contemplative and transformative education,

where aspects of transformative theory and practice are currently used across a range of disciplines" (p. 209). As the interdisciplinary ranges between CE and TE develop, these two types of educations are increasingly intersecting, which Morgan (2015) suggested was "an important aspect of their growth and uptake since the late 1960s" (p. 210). Under certain circumstances, TE is strongly related to CE. For example, Zajonc (2006) proposed that only a combination of CE and TE could foster the rigorous, plural, and dynamic civilization that ought to be the future of humankind.

Before the end of the last century, CE and TE were categorized into the scope of "alternative education" (p. 210), which implied the profound relations between contemplative and transformative approaches (Morgan, 2015). Alternative education is marked with instructional methods often portrayed as complete and whole. Eminent researchers and scholars in association with alternative education (e.g., John Dewey, Alfred North Whitehead, and Sri Aurobindo) advocated that this alternative approach greatly impacted the joint history of CE and TE (Esbjorn-Hargens et al., 2010). However, there was not yet a unanimous definition for either CE or TE because both had been varying swiftly across a variety of fields. CE might be distinct from TE in that cognitive and neuroscience had increasing impacts on the growth of the philosophy and praxes of the CE (Morgan, 2015). Despite the potential disparity, commonalities and the joint past of CE and TE provoked the increasing integration of their knowledge and applications. More scholars and researchers have published in the *Journal of Transformative Education* in connection with CP and made "claims for the transformative nature of contemplation in education" (Morgan, 2015, p. 212). Therefore, in this review, both contemplative intervention (e.g., meditation, rumination, mindfulness) and transformative

approaches (e.g., affective, integrative, and participatory approaches) are integrated and reviewed.

As mentioned in the introduction, mindfulness-based interventions (MBIs) are one specific application of contemplative education. Renshaw and Cook (2017) revealed that in 2005, Napoli et al. were the first to publish a study examining what potential influences MBIs might have on school-age participants. Napoli et al. (2005) carried out a 2-year-long random experiment with control groups. A total of 228 participants from kindergarten to Grade 3 were guided to do MBIs once every two months. This early study indicated that compared with the children not having done the training, those who had the training reported mild progress on aspects of concentration, school performance, and stress reduction. Since then, a growing number of researchers have studied the effects of mindfulness exercises and other CP on school children's study behavior, emotion regulation, and their school records (Felver et al., 2016; Zenner et al., 2014).

Criteria for Inclusion and Exclusion of the Literature for Review

As the first published study introducing contemplative practices was conducted in 2005 (Renshaw & Cook, 2017), the period for searching literature regarding CP for this review was from 2005 to 2020. I used the Chapman University Leatherby Library database, "Discover," a meta-database search engine hosted by "EBSCO," as my main information source. Search terms included "contemplative education," "contemplative practices," and "mindfulness-based interventions." Studies had to be peer-reviewed and published in academic journals that were part of Discover; hence, they had undergone the peer-review process. Newspaper articles, government reports, or other articles in popular media were excluded. Moreover, the research focused on students (whether primary, secondary, high school, undergraduates, graduate

students, or doctoral students in various majors) rather than a labor force in a working environment. Finally, studies had to be conducted in school settings rather than in other settings, such as hospitals or community environments.

In the beginning, when I typed in the search terms "contemplative education," "mindfulness-based interventions," 35 related articles were referenced. Then, I clicked on the page options so duplicates would be removed by the database, and 25 articles appeared. I discovered several articles were written in Spanish, Arabic, Italian, or languages other than English. Therefore, articles in languages other than English were not selected. In the end, 16 empirical studies indicated students' results or development after the intervention of contemplative practices. Nine of those empirical studies were from *The Journal of Transformative Education*.

After that, I typed keywords such as "contemplative practice, male, female, education emphasis, business emphasis, and academic stress," but no results were found. Therefore, of the seven major research questions in my study, the following three questions addressed a gap to fill in the literature base: (1) RQ4 regarding mean difference between females and males on CP, (2) RQ5 concerning mean differences between two academic emphases (education vs. business) on CP, and (3) RQ7 on mean differences between academic emphases on academic stress. The remaining four research questions that have a limited literature base are discussed in detail in the following sections.

Discussion of the Literature

Tables 2 and 3 present summarized data from 16 studies regarding relationships between students' contemplativity and academic stress, and associations between contemplativity and GPA. This literature base was used to address RQ1 and RQ2.

Table 2

Detailed Information of Country, Sample Size, Participant Age, and Levels of Education From 16 Research Studies

Author (year)	Country of study	Sample size	Student age	Student education level
Becker (2017)	USA	*N* = 14	22–64	Nurses recently awarded a bachelor's degree
Broderick and Metz (2009)	USA	Intervention = 150 Control = 30	Average age = 17.4	A private girl's high school
Campion and Rocco (2009)	Australia	Students = 54 Teachers = 19 Parents = 7	5–18	Catholic schools at the elementary level
Mendelson et al. (2010)	USA	*N* = 97	Grades 4-5	Four urban public elementary schools
Nidich et al. (2011)	USA	*N* = 189	Grades 6–7	Middle school students
Robinson and Levac (2018)	Canada	*N* = 24	18–22	4-year undergraduates
Rosaen and Benn (2006)	USA	*N* = 10	12–14	Middle school students at Grade 7
Sathe and Geisler (2017)	India	*N* = 13	24–49	Graduate students
Schonert-Reichl and Lawlor (2010)	Canada	Experimental =139 Control = 107	9–13	Grade 4–7 at elementary schools
Shor et al. (2017)	USA	*N* = 43	18–24	Undergraduates
Tharp (2017)	USA	168 eligible reflection journal responses	18 or 19	First-year undergraduates
Thomas (2017)	USA	Experimental = 67 Control = 32	18–49 or/and older	4-year undergraduates
Troop (2017)	Canada	Students = 4 Instructor = 1	N/A	Doctoral students
Wall (2005)	USA	*N* = 11	Grades 6 and 8	Middle school students

Author (year)	Country of study	Sample size	Student age	Student education level
Walters et al. (2017)	USA	*N* = 20	18–50 or/and older	Undergraduates
Woodrow and Caruana (2017)	USA	*N* = 44	N/A	Graduate teacher students

Contemplativity and Academic Stress, Contemplativity and GPA

Table 2 indicates most selected studies were from the United States (11 out of 16), three out of the 16 studies were conducted in Canada, one in Australia, and one in India. This trend may indicate that studies in places other than the United States are needed to examine the potential benefits of using MBI in classrooms across cultures; translations of studies in other languages are also needed. Another factor to consider is the sample size, which was small in some studies: 10 participants in Rosaen and Benn's (2006) and 11 in Wall's (2005) study; hence, the results might not be generalizable. Most studies provided information about students 5–50 years or older, from kindergarten children to adult students. Students' academic levels included elementary schools, middle schools, undergraduates, graduate students, and doctoral students, with 4-year undergraduates comprising most of the samples. This trend indicates the majority of contemplative practice research studies to date have been conducted with higher education samples.

Table 3 provides additional information regarding the 16 studies examined for this literature review. First, students represented a diverse range of majors, including social work, civic engagement, contemporary curriculum theory, business, nursing, biology, criminal justice, music, sociology, community engagement for social change, holistic health studies, elementary education, secondary education, special education, English, and math. Second, study durations ranged from 100 minutes to 1-year long, with most being several weeks. Third, most research

designs were qualitative-oriented, covering content analysis, descriptive analysis, thematic analysis, autoethnography individual interview, and consensual qualitative design. Shor et al. (2017) delineated consensual qualitative design as "a multiphase method that requires members of the research team to code the essays individually during each step of the process, and then agree with the final coding" (p. 162). One of the two quantitative designs employed reflective questionnaires. Two mixed methods research designs were found in the literature: one was a concurrent mixed-method, whereas the other was a mixed-method consisting of survey and textual analysis of the writing.

One design worthy of notice is the nonrandom experiment trial, which accounted for three studies on the list. It was nonrandom because it had targeted participants (e.g., at-risk urban middle school students). Finally, when analyzing the totality of the conclusions presented by the authors of these studies, 15 out of 16 pieces of literature indicated positive outcomes of varying degrees for participants. One out of 16 studies showed that meditation intervention as one form of contemplative practice had neutral effects on the participants in a quantitative study (Thomas, 2017). However, open-ended qualitative questions indicated a positive reaction to the intervention (Rosaen & Benn, 2006; Thomas, 2017). Some participating students reported that contemplative practices helped enhance their emotional regulation and contentment. Others described beneficial effects of this practice: most respondents reported having experienced certain kinds of transformation like "mind, body, and spirit transformation with reverberation on personal, community and global levels" (Sathe & Geisler, 2017, p. 16).

Table 3

Summary of Students' Subject, Study Duration, Research Design and Authors' Conclusion

Author (year)	Student's subject	Study duration	Research design	Authors' conclusion
Becker (2017)	Nursing program	N/A	Qualitative content analysis	Positive personal transformation
Broderick and Metz (2009)	Health curriculum	5 weeks	Nonrandom experiment trial	Mindfulness helps enhance adolescent's emotional regulation and contentment
Campion and Rocco (2009)	N/A	1 year	Qualitative	Favorable impressions of program benefits
Mendelson et al. (2010)	N/A	12 weeks	Quantitative	Pupils reported reduced chronic stress after meditation
Nidich et al. (2011)	English and math	3 months	Nonrandom experiment trial	Meditating students improved in English and math
Robinson and Levac (2018)	Civic engagement and global citizenship	2013–2014 or 2014–2015 academic year	Qualitative thematic analysis	Students' reflective capacities varied considerably
Rosaen and Benn (2006)	N/A	1 year	Qualitative	Students described the beneficial effects of transcendental meditation
Sathe and Geisler (2017)	Holistic health studies	1 year	Qualitative	Participants reported "mind, body and spirit" transformation with reverberation on several aspects of life
Schonert-Reichl and Lawlor (2010)	N/A	10 weeks	Nonrandom experiment trial	Significant increases in optimism after CP intervention

Author (year)	Student's subject	Study duration	Research design	Authors' conclusion
Shor et al. (2017)	Community engagement for social change	Semester-long	Consensual qualitative design	Context of the community placement shapes the types of disorienting dilemmas students identified
Tharp (2017)	N/A	N/A	Qualitative content analysis	Students' narrative revealed interesting choices to reflect on core concepts across social identity
Thomas (2017)	Social work	100 minutes / semester	Concurrent mixed-method	Quant. = neutral Qual. = positive
Troop (2017)	A contemporary curriculum theory course	12 weeks	Qualitative auto-ethnography individual interview	Helpful to thinking and a sophisticated concept of a lived curriculum
Wall (2005)	N/A	5 weeks	Qualitative	Students felt relaxed, calm, and less stressed, experienced a feeling of integration with all that surround
Walters et al. (2017)	Majority in business and nursing	6 weeks	Quantitative reflection questionnaire	Transformational service learning helped
Woodrow and Caruana (2017)	Elementary, secondary, and special education	2011–2012 academic year	The mixed-method survey, textual analysis	Evidence of personal transformation of preservice teachers to raise their critical consciousness

Student participants also reported reductions in anxiety and stress after contemplative intervention (Broderick & Metz, 2009; Campion & Rocco, 2009). Campion and Rocco (2009) reported that nearly half of students remarked that undergoing contemplative practices at school

had caused them to practice them off campus when they were worried or depressed. The qualitative findings and the quantitative results are generally complementary to show that contemplative intervention somewhat curtailed students' anxiety and pressures. For example, a student in the fourth grade stated, "now I know different routines and exercises that I can do at home that helps me lower and reduce my stress" (Waters et al., 2015, p. 117).

Schonert-Reichl and Lawlor (2010) assessed the impact of CP intervention on an experimental group; participants reported feeling a little more optimistic and positive than their counterparts in control groups. The results also revealed after CP intervention, many elementary school pupils felt more spiritually relieved or enlightened than those without interventions. Wall (2005) found students reported increased contentment, relief, peace, refreshment, spiritual liberation, and a feeling of integration with all that surrounded them after participating in a program consisting of mindfulness training, shadow boxing, and conventional rumination. Likewise, Rosaen and Benn (2006) examined early adolescent ethnic minority students who had undergone transcendental meditation for 12 months in a qualitative study. As a result, participants felt better able to regulate emotions, control themselves, stay alert, and experienced stress reduction. In this study, a respondent commented, "It's made me a calm person and easier to talk to, and listen to people talking" (Waters et al., 2015, p. 118). To summarize, the findings offered initial conclusions concerning the effectiveness of contemplative practices on students' contentment or welfare. The findings generally suggested that contemplative practices cultivated small but significant improvements in students' welfare.

Contemplative practices can be important for college students because they may help students stay focused for the time being or immediately return to what they should be doing if

they begin digressing or deviating from the key point under discussion (Thomas, 2017). For example, one student wrote:

> The mindfulness things have been good for me in getting me to stop thinking about myself so much, about how I will mess up or look stupid. When you said, "place your intention" that made sense. So I try to place my intention and remember it's not about me. (Thomas, 2017, p. 110)

Another student reported, "learning that everybody loses focus; my job is just to re-focus on the client and actually listen, and taking one step back and recollecting myself and then dealing with what is there in that moment" (Thomas, 2017, p. 110).

CP also may be important for college students to cultivate a sense of empathy. For example, one student mentioned after the CPs, "I remember that 'just like me' exercise you did. Just like me, this person wants to be happy. Just like me, they want to feel safe. That rally [sic] stuck, you know" (Thomas, 2017, p. 110).

Shor et al. (2017) inquired how undergraduates attending courses in community engagement for social change reacted to the problem of disorienting dilemmas after they had experienced transformational service-learning related to CPs. The common disorienting dilemma consisted of such elements as (a) learning about the client's difficult current or past life history; (b) keeping close contact with a client; (c) noting a positive or negative characteristic about the client; (d) struggling when interacting with the client; (e) learning about the poor treatment of a child; or (f) being involved in a negative interaction with the client. According to Robinson and Levac (2018), participants enrolled in a civic engagement course tended to judge their customers' needs and feelings when those future social workers were in a disorienting dilemma. Shor et al. (2017) found participants taking a community engagement course who were trained to

help those lacking permanent housing in the community lacked knowledge bout serving and supporting homeless individuals. After the training, students better understood what the displaced people had endured. A participant reported:

> A middle school girl was telling me how her 19-year-old sister died giving birth to her baby, and how her three brothers died in the war. Her parents and her three younger siblings came to the United States 7 years ago. Her parents left three kids back in Somalia because they couldn't afford to take the other kids with them. (Shor et al., 2017, p. 165)

CP also may be important for college students because they potentially foster students' capacity for introspection. Sathe and Geisler (2017) investigated 13 faculty members teaching in graduate programs in holistic health studies based on contemplative learning and included an understanding of introspection through mindfulness exercises, meditation practices, and herbal medicine from Tibet and India. Students understood deeply the extensive association and potential advantages rooted in meditation. One student stated:

> The ashram experience was healing for me and I was able to find solutions that are good for everyone through meditation, peace, and being true to self. This personal transformation will heal my family, my community, my profession, my nation, and tap into the consciousness of world peace. (Sathe & Geisler, 2017, p. 25)

The previous paragraphs and Tables 2 and 3 listed literature to address RQ1 and RQ2, on the relationship between contemplativity and academic stress. Overall, the literature supported that students improved academically after contemplation-based interventions (Nidich et al., 2011; Robinson & Levac, 2018; Rosaen & Benn, 2006). In addition, the literature also backed that CPs like meditation, mindfulness exercises, and yoga were helpful to reduce educational

stress (Broderick & Metz, 2009; Campion & Rocco, 2009; Schonert-Reichl & Lawlor, 2010; Thomas, 2017; Wall, 2005).

Academic Stress and GPA

The following section addresses RQ3 on relations between academic stress and GPA and RQ6 concerning comparisons between males and females on academic stress. Table 4 summarizes data on links between academic stress and GPA from the literature.

The literature showed associations between participants' educational stress and their academic performance (see Table 4). For the six studies reviewed that addressed this issue, the year of publication ranged from 1994 to 2020. Of the six studies, three took place in the United States; two were conducted in China; the remaining one in 1994 (Crystal et al.) was conducted with participants in the United States, China, and Japan. The Crystal et al. study was a quantitative longitudinal one lasting a little more than a decade from 1980 to 1991. The other five studies were all quantitative design. The sample sizes were all above 100 participants. The Frazier et al. study conducted in the Midwestern United States in 2019 recruited nearly 9,000 participants which ranked first in the number of student participants of all six studies. The level of education varied from secondary education to higher education. As for the results, half of the literature indicated students who experienced a high level of learning stress were more likely to earn a lower level of GPA than were those who had a lower level of academic stress (Bryan et al., 2014; Frazier et al., 2019; Lin et al., 2020). This finding meant academic stress was negatively correlated with GPA in these three studies.

Table 4

Studies on Students' Academic Stress and GPA

Author (year)	Study location	Sample size	Participant age	Education level	Study duration	Research design	Results & conclusions
Bryan et al. (2014)	U.S.	422	Mean = 36.29	Student service members	N/A	Quantitative	Students with more stress earned lower overall GPA
Crystal et al. (1994)	U.S., China, Japan	U.S.= 1,386 China = 1,633 Japan = 1,247	Average = 17	High school students	1980-1991	Quantitative longitudinal study	U.S.: higher GPA indicated more stress; China and Japan: higher GPA not necessarily related to more stress
Frazier et al. (2019)	Mid-western U.S.	8997	N/A	Undergraduates	Feb – March 2015	Quantitative	More stress indicated lower GPAs
Lin et al. (2020)	Fujian China	347	N/A	Dental undergraduates	The 2nd semester of 2017-18 academic year	quantitative	Stress scores were negatively correlated with GPA
Tang and Westwood (2007)	HK China	120	Adolescents	Secondary school level	N/A	Quantitative	No significant correlation between stress and GPA
Travis et al. (2020)	Southeastern U.S.	853	N/A	Higher education	N/A	Longitudinal quantitative	Good stress indicated higher GPAs; bad stress indicated lower GPAs

One study conducted in Hong Kong, China (2007) with 120 participants found no significant correlation between students' academic pressure and academic achievements (Tang & Westwood, 2007). One longitudinal study done in the United States, China, and Japan reported different results: the U.S. high achievers indicated more stress than low achievers, whereas the Chinese and Japanese students indicated no significant correlation between educational stress and scholarly achievements (Crystal et al., 1994). Interestingly, one study done in the Southeastern United States classified stress into two categories: challenge stress and hindrance stress (Travis et al., 2020). Travis et al. (2020) stated that challenge stress was helpful to improve students' GPA, whereas hindrance stress was an obstacle to students' school performance. This study found participants with positive stress earned higher GPAs than did their counterparts with negative stress.

Academic Stress and Gender

The previously listed literature provided information regarding differences between females and males on academic stress (see Table 5). The year of publication of these studies varied from 1995 to 2020, with a time span of a quarter of a century. Of the six studies, three took place in the United States, two in India, and one in Fujian, China. The studies with the smallest (N = 50) and largest sample sizes (N = 669) were conducted in India. The level of education of the participants varied from elementary schools to postgraduate colleges. All researchers applied quantitative designs except Silverman et al. (1995), who used mixed methods. As for the results, one study found female students reported less educational stress than their male counterparts (Mishra, 2018). Two studies reported no significant differences between male and female students on total scores of academic stress (Bjorkman, 2007; Lin et al., 2020). Three studies showed female students experienced more learning pressure than males (Banu et

al., 2015; Karaman et al., 2019; Silverman et al., 1995). In summary, of these six studies, (a) half demonstrated female students expressed a higher level of educational stress than male students, (b) two detected no significant differences between genders on scores of academic stress, and (c) one indicated female students had lower academic stress than male students.

Table 5

Academic Stress: Comparisons of Male and Female Students

Author (year)	Study location	Sample size	Participant age	Education level	Study duration	Design	Results & conclusion
Banu et al. (2015)	India	Male = 355 Female = 314 Total = 669	N/A	Undergraduates	N/A	Quantitative	Females had more stress than males ($p < .01$).
Bjorkman (2007)	Illinois, U.S.	Male = 113 Female = 155 Total = 268	6th, 7th, 8th graders	Junior high school	N/A	Quantitative	Boys had slightly more stress than girls
Karaman et al. (2019)	U.S.	Male = 179 Female = 128 Total = 307	Mean = 21	Undergraduates	N/A	Quantitative	Females had higher stress than males.
Lin et al. 2020	Fujian, China	Total = 347	N/A	Dental undergraduates	The 2nd semester of 2017–18 academic year	Quantitative	No significant difference in total scores of stress between genders.
Mishra (2018)	India	Male = 30 Female = 20 Total = 50	22–35 years old	Postgraduates	N/A	Quantitative	Females had less stress than males.
Silverman et al. (1995)	U.S.	Male = 141 Female = 132 Total = 273	7–12 years old	Elementary school	N/A	Mixed	Girls reported more stress than boys.

Implications for Prospective Studies in China

Scientific interest in the application of contemplative practices on students' learning has developed quickly and steadily. Thus, attention to contemplative intervention in schools has appeared to evolve exponentially, leading to a so-called mindfulness fad in education. For example, Greenberg and Harris (2012) warned this overzealous utility of CPs in schools should be guarded against because the marketing efforts outweigh the current evidence supporting the practices. Given the equivocal results of previous research in this field, Chadwick and Gelbar (2016) stated the adoption of contemplative practices on students' learning "may be at best positive or minimally effective, and at worst neutral" (p. 106).

Despite the current state of the research, contemplative approaches are a bold attempt to innovate traditional instructional methods. CE may cultivate a diversified setting for students to acquire knowledge on their own and to play a leading role in their field of study. CE also grants students opportunities so they may be better able to (a) concentrate on their learning, (b) expand their comprehension, (c) generate broader associations with their peers and teachers, and (d) inspire deep probes into the essence of who they are and how they can adapt to the outside world (Barbezat & Bush, 2014).

There is a lack of empirical studies on contemplative practices among college students in China. As stated in Chapter 1, given that China is the world's most populous country and has experienced tremendous transformation in almost every field in its development, fierce competition is unavoidable. This competition potentially causes overwhelming anxiety and pressure among its people, especially among college students, who are a driving force for the nation's development. Because CP may reduce stress and improve students' academic achievements as found in the Western world, there is a need to study and explore its potential influence on Chinese students. Furthermore, few quantitative, large sample studies on CP have been conducted.

Summary

An increasing number of contemplative practices, as a form of contemplative education, have been applied to transform the learning process. For example, as Morgan (2015) concluded, "the histories, principles, and practices" of contemplative education and transformative education intersect and interconnect. Each contains contemplative and transformative aspects, both take a holistic approach to education and share elements of their histories" (p. 211). The claim that contemplative practices are potentially powerful methods to transform learning was discussed in this review of the literature.

The literature review included what contemplative practice is and why it may be important for college students. The majority of the research studies reported a variety of benefits that were brought about by contemplative practices, such as raising students' sense of connection and contentment. The review of the literature indicated that many student outcomes were positive after interventions designed to enhance contemplative practices were implemented.

As for correlations between GPA and stress, the majority of the literature in this review found participants with more educational stress may do more poorly in school (Bryan et al., 2014; Frazier et al., 2019; Lin et al., 2020; Travis et al., 2020). Yet, some researchers reported no significant differences between academic stress and academic performance (Crystal et al., 1994; Tang & Westwood, 2007). Three studies conducted in China generated different results: Lin et al. (2020) found Chinese students' learning stress was negatively correlated with their GPA, although other researchers found no significant associations between Chinese students' learning stress and their GPA (Crystal et al., 1994; Tang & Westwood, 2007).

Regarding differences between female and male students' levels of academic stress, most literature in this review reported female students had more educational stress than their

male counterparts (Banu et al., 2015; Karaman et al., 2019; Silverman et al., 1995). Other researchers found both genders had similar amounts of academic stress (Bjorkman, 2007; Lin et al., 2020). One study in India with postgraduate participants found male students had more academic stress than female students (Mishra, 2018). The majority of published, peer-reviewed studies to date have been conducted in the West. Thus, there is a need for further study to examine CP in Eastern cultures. In the next chapter, a method for examining contemplative practices with Chinese undergraduates is presented.

CHAPTER 3: METHODOLOGY

Chapter 3 describes the methodology of my study, including (a) the research design, (b) participants and sampling, (c) validity and reliability analyses of the two original instruments used to collect the data, (d) how the instruments were translated into Chinese by utilizing a backward translation technique, (e) ethical issues in the sampling selection, and (f) the data collection procedures. The purpose of the study was to examine the relationships among the three main variables: undergraduates' contemplativity, perceived academic stress, and GPA. Another purpose was to examine differences between genders and two academic emphases (education vs. business) on contemplative practice and academic stress.

Research Design

The study used a quantitative within and between groups research design to examine Chinese undergraduates' perceptions of their academic environment. Data were collected online with a demographic survey and two scales: the Scale of Contemplative Practice in Higher Education (SCOPE; Krikorian, 2016) and the Educational Stress Scale for Adolescents (ESSA; Sun et al., 2011). SCOPE is a 30-item self-report measure that asks questions about contemplative practices in higher education. ESSA is a 16-item self-report scale that measures students' academic stress.

Participants and Sampling

The study population was undergraduates in China. The study sample included first-year students and sophomores at a private university in Shanghai, China. McMillan (2016) defined the sample as simply the people whom the researcher investigates, and there is a close relationship between a research question and sample selection. As McMillan pointed out, the research question aligns with the sample's most significant and distinctive traits. Leavy (2017) also mentioned that samples need to be selected in line with research questions.

The participants were solicited from an English writing course taught by me and a colleague. My sampling method consisted of two parts:

1. Participants were recruited from classes other than my class; I requested one of my colleagues to deliver the anonymous online survey to her students.
2. Participants were recruited from my class; my study used an anonymous online format, and therefore, information on students' identities was not available to me.

This sample was a convenience sample of undergraduate students. Participants (N = 144) completed a demographics section, SCOPE, and ESSA. Of the sample, 113 provided GPA data correctly. When GPA was involved in the analysis, the survey results of 113 participants were used. There were no inclusion or exclusion criteria except that participants had to be at least 18 years old. A description of the participants' demographics are presented in Tables 6 and 7.

Table 6

Total Participants' Demographics (N = 144)

Characteristics	*N*	%
Sex		
Male	41	28.5
Female	101	70.1
Prefer not to answer	2	1.4
Characteristics	*N*	%
Age		
18	4	2.8
19	59	41
20	69	47.9
21	10	6.9
22	2	1.4
Ethnicity		
Han	135	93.8
Non-Han	9	6.3
Year in program		
First	1	.7
Second	143	99.3
Emphasis		
Education	77	53.5
Business	67	46.5

Table 7

Participants' Demographics for GPA Subsample (N = 113)

Characteristics	*N*	%
Sex		
Male	27	23.9
Female	84	74.3
Prefer not to answer	2	1.8
Age		
18	4	3.5
19	50	44.2
20	52	46
21	5	4.4
22	2	1.8
Ethnicity		
Han	106	93.8
Non-Han	7	6.2
Year in program		
First	1	.9
Second	112	99.1
Emphasis		
Education	59	52.2
Business	54	47.8

Instrumentation

The instruments used in this study were the SCOPE and the ESSA. The Statistical Package for the Social Sciences (SPSS 25.0 version) was used to analyze the data.

SCOPE Instrument

The 30-item SCOPE ~~scale~~ is a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The total score range is 30–150. The higher the scores, the more contemplativity participants might possess. There are no specific cutoff scores. The total score was used in this study.

Reliability of SCOPE

Reliability addresses the overall consistency of a scale and indicates the extent of freedom from measurement error. Internal consistency and temporal stability are two kinds of reliabilities to ensure the accuracy of the measurement (DeVellis, 2012). Cronbach's coefficient alpha refers to the relation between items to reflect the degree to which items, as a group, hold together (Urdan, 2010). Internal consistency was assessed by Cronbach's alpha. DeVellis (2012) suggested Cronbach's alpha < .6 is not acceptable, from .6 to .65 is unsatisfactory, from .65 to .70 is minimally desirable, and from .8 to .9 indicates very good reliability.

Cronbach's alpha for the total 30-item SCOPE was 0.865 (Krikorian, 2016). When separately evaluated, eight factors indicated different Cronbach's alpha values, respectively. The first three factors were undesirable but minimally acceptable with values > 0.6. In addition, the other five factors were all unacceptable, with values < 0.6 (see Table 8). The overall internal reliability indicates the total SCOPE possesses very good internal consistency. The individual factors either possessed weak or unacceptable internal reliability; therefore, only the total score was used in this study.

Table 8

Reliability for SCOPE Subscales

Subscale	Item per scale	Cronbach's alpha
1. Awareness of feelings	4	0.673
2. Accept disappointment as human experience	4	0.644
3. Focused attention	6	0.685
4. Establish support	3	0.544
5. Listen without bias	3	0.292
6. Kindness toward self	4	0.596
7. Question for understanding	3	0.427
8. Nonjudgmental understanding	3	0.424

Note. Adapted from "The Development of the Scale of Contemplative Practice in Higher Education" [Doctoral dissertation], by M. Krikorian, 2016, Chapman University, p. 93. Copyright 2016 by M. Krikorian. Reprinted with permission.

Test-retest reliability was used to examine the temporal stability of the final 30-item SCOPE. The scale author, Dr. Krikorian recruited 27 participants in a 2-week period to test the stability. Pearson's *r* and Spearman's rho correlations were involved in the assessment. DeVellis (2012) suggested a correlation coefficient ≥ .6 is evidence of strong temporal stability for self-report scales like SCOPE. Krikorian (2016) reported that for the overall SCOPE, the Pearson's $r = .870$ and Spearman's rho = 0.852. Krikorian also examined the correlation between each item to examine temporal stability between individual items. The results indicated ~~the~~ SCOPE ~~scale~~ as a whole possessed strong and acceptable test-retest reliability, but many single items had low temporal stability correlation coefficients < .6 (Krikorian, 2016).

In addition to correlations, the SCOPE ~~scale~~ author used a dependent *t* test to investigate the mean difference to further examine temporal stability. The mean difference = .04938 (see Table 9) was not significant, which meant the mean score between the two administrations remained stable.

Table 9

Means, Mean Difference, and Standard Deviations for Overall SCOPE (N = 27)

Scale	Mean	Mean difference	Standard deviation
Time 1	3.7951	.04938	.47714
Time 2	3.7457	.04938	.52876

Note. Adapted from "The Development of the Scale of Contemplative Practice in Higher Education" [Doctoral dissertation], by M. Krikorian, 2016, Chapman University, p. 97. Copyright 2016 by M. Krikorian. Reprinted with permission.

Validity of SCOPE

Barbezat and Bush (2014) suggested that CP is comprised of three subconstructs: listening competency, mindfulness, and self-compassion. SCOPE used content validity and construct validity (Krikorian, 2016). Content validity examined if the SCOPE accounted for the three subconstructs and was conducted with a panel of six experts in contemplative practice and scale construction who helped generate the final 30-item SCOPE. Construct validity evaluated to what extent SCOPE measured the stated construct. Construct validity was obtained through exploratory factor analysis (EFA). Items with factor loadings at above 0.3 or below -0.3 were retained. Potential factors with eigenvalues of 1 or above were used to examine potential structure. Muijs (2011) depicted an eigenvalue as "the variance extracted by the factor . . . we retain only eigenvalues above 1" (p. 200). The initial EFA produced a 30-item, 8-factor model with eigenvalues above 1 (see Table 10). This 8-factor structure was different from the three subconstructs provided in the research literature.

Table 10

Exploratory Factor Analysis Eigenvalues

Factor	Eigenvalue	% of variance	Cumulative %
1	6.525	21.751	21.751
2	1.942	6.474	28.225
3	1.758	5.860	34.084
4	1.483	4.944	39.028
5	1.384	4.612	43.640
6	1.246	4.153	47.793
7	1.174	3.914	51.707
8	1.068	3.562	55.269

Note. Adapted from "The Development of the Scale of Contemplative Practice in Higher Education" [Doctoral dissertation], by M. Krikorian, 2016, Chapman University, p. 86. Copyright 2016 by M. Krikorian. Adapted with permission.

According to Aron et al. (2009) and Muijs (2011), factor structure as a whole ought to explain 60% of the variance evaluated by factor analysis. The overall final 8-factor model accounted for 55.27 of the variance. Krikorian (2016) described this estimate as "a minimally acceptable factor structure to explain the variance" (p. 100) for the overall scale. Krikorian and Busse (2019) adapted the 30-item, 8-factor SCOPE into a 27-item, 7-factor scale using EFA (see Table 11).

The 7-factor model adapted in 2019 shared 54.48 of the variance, which Krikorian and Busse (2019) reported as a "minimally acceptable" (p. 248) factor structure to account for the variance in the scale. Because SCOPE is a nascent measure used with a new, cross-cultural population, the original 30-item measure was employed in the current study.

Table 11

Exploratory Factor Analysis Eigenvalues

Factor	Eigenvalue	% of variance	Cumulative %
1	6.113	22.642	22.642
2	1.840	6.815	29.457
3	1.688	6.253	35.710
4	1.458	5.401	41.111
5	1.340	4.962	46.073
6	1.191	4.412	50.484
7	1.080	3.999	54.484

Note. From "Construction of a Scale of Contemplative Practice in Higher Education: An Exploratory Study" by M. Krikorian and R. T. Busse, 2019, *The Journal of Contemplative Inquiry, 6*(1), p. 241. Copyright 2019 by CMind, the Center for Contemplative Mind in Society. Reprinted with permission.

Translation and Validation of the Chinese SCOPE

The original questionnaire was written in English, whereas the participants who completed the questionnaire were Chinese undergraduates. Therefore, I needed to translate the scale from English into Chinese. First, I obtained permission to use the English scale from SCOPE's authors. Then I used the backward translation process (Sun et al., 2011). The backward translation method was as follows:

1. I translated the original scale of SCOPE into Chinese on my own.
2. A professor of English at Wuhan University of Technology, in Wuhan province, China, reviewed the Chinese translation and gave some suggestions regarding clarity, precision, and cross-cultural adaptation.
3. I revised and improved the Chinese version based on the professor's suggestions.
4. A pilot study was conducted. Specifically, a group of 10 students reviewed the revised Chinese version and provided comments.
5. I revised the Chinese version again according to the students' comments.
6. Another English professor at Shanghai Foreign Studies University, Shanghai, China, independently translated the Chinese version of the scale back into English.
7. The back-translated SCOPE was finally revisited by Dr. Randy Busse at Chapman University, California, to ensure it was equivalent to the original.

ESSA Instrument

The original ESSA was comprised of 30-items derived from consultation with experts in education in China and referenced a wide range of relevant literature (Sun et al., 2011). These 30 items were first produced in English and adapted from other English measurements. The scale was then modified and culturally adapted after pilot testing, and a final 16-item scale was generated as a result.

The 16-item ESSA is a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The total score range is 16–80, with high scores indicating more stress. The Chinese version was later created by the backward translation method. The response format of the Chinese version is a 5-point Likert-type scale ranging from 1 = *strongly agree* to 5 = *strongly disagree,* with a high scores indicating less stress. The response format of the Chinese ESSA was opposite to that of the original one. Because the study was conducted with Chinese students in China, the Chinese version of ESSA (Sun et al., 2011) was used in my study.

The 16-item Chinese ESSA consists of five subscales: pressure from study, workload, worry about grades, self-expectation stress, and study despondency. The scale accounted for 64% of the total item variance. ESSA scores reflected appropriate internal consistency, temporal stability, and satisfactory concurrent and predictive validity (Sun et al., 2011).

Reliability of ESSA

Cronbach's alpha and mean correlations between items were applied to examine internal reliability. Intraclass correlation coefficients (Koch, 1982) were employed to explore temporal stability. Robinson et al. (1991) suggested a Cronbach's alpha of .70 or above or a mean correlation between items of .30 or above indicate acceptable reliability. Landis and Koch (1977) stated that intraclass correlation values of .40 to .60 were considered reasonable, and correlations from .61 to .80 indicate strong reliability.

According to the statistics of the initial survey (N = 347), Cronbach's alpha for the final ESSA scale equaled .81, demonstrating strong internal reliability. Cronbach's alphas for three subscales (pressure from study, workload, and worry about grades) were above .70, indicating acceptable reliability. The Cronbach's alpha for the remaining two (self-expectation and despondency) were both .66 which is close to an acceptable level of reliability. The mean correlation coefficients between items for the five subscales were above .30, demonstrating acceptable reliability levels (Sun et al., 2011).

Sun et al. (2011) stated "the test-retest reliability was evaluated with the intraclass correlation coefficients" (p. 539), using data from a second sample of 135 participants. The coefficient for the final 16-item scale was .78, indicating strong temporal stability. Furthermore, the coefficients for the five subscales were all above .61, (except for self-expectation, which was .59), showing strong or near strong test-retest reliability. Finally, intraclass coefficients for the inter-item correlations ranged from .44 to .67, revealing medium-to-strong temporal stability after 2 weeks (Sun et al., 2011).

Validity of ESSA

Both EFA and CFA were used to examine the construct validity of the scale. EFA resulted in an initial 16-item scale with all individual items having a strong loading on the primary factor instead of other factors (see Table 10). The eigenvalues of five subscales were all above 1 (4.26, 2.30, 1.31, 1.22, and 1.07). The five factors shared 26.6%, 14.4%, 8.2%, 7.6%, 6.7% of the variance, respectively, and "interfactor correlations ranged from .04 to .57" (Sun et al., 2011, p. 539; see Table 12).

Hinkin (1998) stated that CFA is critical in building a new instrument and should be evaluated with factor analyses from another sample. Therefore, a CFA was conducted to examine the match of the exploratory structure to the data from a third sample of 1,670 participants. Each item's factor loading on the CFA's corresponding factor was akin to the

outcome from the EFA, with all above .50 (see Table 12). All statistics met the criterion for a proper fit except for a high value of chi-square fit, which might be caused by the large sample size. The CFA indicated the 16-item scale had an adequate fit, and the development of ESSA and the aggregation of its total scores were appropriate.

Criterion validity indicates the extent to which the results of a created survey associate with an already established measurement that serves as a criterion. Concurrent or predictive validity should be tested based on the objective of the measurement being developed (Terrell, 2016).

The Academic Expectation Stress Inventory (AESI; Ang & Huan, 2006a) served as a criterion measure to assess the concurrent validity of ESSA. The analysis indicated ESSA scores were significantly correlated with AESI scores, showing good concurrent validity (Sun et al., 2011).

To investigate predictive validity, a scale of depression and a scale of "suicidal thoughts were used as criterion measures" (Sun et al., 2011, p. 541) given these variables have been found to be correlated with academic stress (Ang & Huan, 2006b; Bjorkman, 2007; Liu & Tein, 2005). Pearson's correlation, point-biserial correlation, and Spearman's rho were used to examine the relationships. ESSA scores were "more predictive of depression and suicidality" (Sun et al., 2011, p. 542) than AESI scores (see Table 13).

Overall, ESSA scores were significantly correlated with the AESI scores. In addition, three ESSA subscales—pressure from study, self-expectation, and worry about grades—were associated with overall AESI scores (see Table 13). The total ESSA was negatively related to academic grades, indicating that participants with low grades exhibited higher levels of stress. ESSA and its five subscales were positively associated with the depression index (see Table 13). Indices of ESSA and two of its subscales—pressure from study and despondency—were significantly correlated with suicidal thoughts (see Table 13).

Table 12

Rotated Factor Loadings and Communalities (h2) for ESSA in the EFA (N = 347) and Factor Loading in the CFA (N = 1,670)

	EFA						CFA
	Factor loadings						
	1	2	3	4	5	h^2	Factor loadings
6. I feel a lot of pressure in my daily studying	.77[a]	−.01	−.02	−.09	.03	.56	.80
11. There is too much competition among classmates that brings me a lot of academic pressure	.76[a]	.06	.03	.05	−.21	.51	.66
4. Future education and employment bring me a lot of academic pressure	.68[a]	−.09	−.02	.04	.08	.51	.72
5. My parents care about my academic grades too much that brings me a lot of pressure	.54[a]	.13	.04	−.08	.14	.36	.64
3. I feel there is too much homework	.06	.81[a]	−.08	.06	−.07	.68	.70
2. I feel that there is too much schoolwork	−.11	.70[a]	.10	−.07	.15	.52	.68
7. I feel that there are too many tests/ exams in the school	.07	.59[a]	.04	.03	−.02	.39	.69
10. I feel that I have disappointed my teacher when my test/exam results are not ideal	−.10	.09	.93[a]	−.09	−.10	.74	.67
9. I feel that I have disappointed my parents when my test/exam results are poor	.15	.01	.59[a]	.15	.04	.56	.85
8. Academic grade is very important to my future and even can determine my whole life	.13	−.13	.53[a]	.12	.14	.37	.52
14. I feel stressed when I do not live up to my own standards	−.02	.08	−.10	.84[a]	.01	.66	.71
15. When I fail to live up to my own expectations, I feel I am not good enough	−.01	.01	.05	.59[a]	−.06	.35	.56
16. I usually cannot sleep because of worry when I cannot meet the goals I set for myself	−.04	−.08	.10	.52[a]	.08	.32	.58
12. I always lack confidence with my academic scores	.04	.03	−.03	−.04	.68[a]	.49	.52
1. I am very dissatisfied with my academic grades	−.15	−.01	.04	.05	.66[a]	.37	.68
13. It is very difficult for me to concentrate during classes	.17	.08	−.08	.00	.51[a]	.39	.67

Note. Factors loadings in the CFA are the standardized regression weights for each item with the corresponding factor. ESSA = Educational Stress Scale for Adolescents; EFA = exploratory factor analysis; CFA = confirmatory factor analysis; Factor 1 = Pressure from study; Factor 2 = Workload; Factor 3 = Worry about grades; Factor 4 = Self-expectation; Factor 5 = Despondency; *h*2 = Communalities.

a. Factor loadings with values of 0.5 or greater in the EFA are provided.

Table of EFA & CFA for validity analysis of ESSA scale. From "Educational Stress Scale for Adolescents: Development, Validity, and Reliability with Chinese Students" by J. Sun, M. P. Dunne, X. Hou, and A. Xu, 2011, *Journal of Psychoeducational Assessment, 29*(6), p. 537 (https://doi.org/10.1177/0734282910394976). Copyright 2016 by SAGE Publications. Reprinted with permission.

Table 13

Mean, SD, Alpha Coefficient, and Intervariable Correlation Coefficients From the First Survey (N = 347)

	M/SD	Alpha	1	2	3	4	5	6	7	8	9	10
1.ESSA total	54.14/9.32	.81	1									
2.Pressure from study	13.99/3.56	.74	.81*	1								
3.Workload	9.51/2.90	.75	.58*	.39*	1							
4.Worry about grades	11.38/1.25	.71	.57*	.34*	.05	1						
5.Self-expectation	9.91/2.56	.66	.55*	.27*	.04	.35*	1					
6.Despondency	9.31/2.83	.66	.67*	.44*	.33*	.14*	.19*	1				
7.AESI total	30.61/6.46	.85	.51*	.29*	.-03	.52*	.83*	.07	1			
8.CES-D (depression)	15.34/8.93	.87	.47*	.38*	.25*	.15*	.24*	.44*	.19*	1		
9.Suicidal thoughts	NA	NA	.17*	.12*	.13*	.04	.03	.21*	.01	.42*	1	
10.Academic grades	NA	NA	-.20*	.10	-.13*	.03	.02	-.43*	.16*	-.17*	-.07	1

Note. ESSA = Educational Stress Scale for adolescents; AESI = Academic Expectation Stress Inventory; CES-D = Centre for Epidemiological Studies-Depression Scale; NA= not applicable.

a = Pearson correlation coefficient for continuous variables; Point-biserial correlation coefficient for correlations between suicidal thoughts and others; Spearman *r* for relationships between academic grades and others.

*$P < .05$.

Table of mean, SD, alpha coefficient, and intervariable correlation coefficient in the first survey. From “Educational Stress Scale for Adolescents: Development, Validity, and Reliability with Chinese Students” by J. Sun, M. P. Dunne, X. Hou, and A. Xu, 2011, *Journal of Psychoeducational Assessment, 29*(6), p. 540 (https://doi.org/10.1177/0734282910394976). Copyright 2016 by SAGE Publications. Adapted with permission.

Validation of the Chinese ESSA

Items were generated in English before they were translated into Chinese by a back-translation method. The steps were as follows (Sun et al., 2011):

1. The scale creator invited two professors skilled in Chinese at the Queensland University of Technology to convert the original scale freely into Chinese.
2. The two converted versions were delivered to a third professor at Shandong University, China, who was responsible for transcribing it back into English.
3. An English native speaker at Queensland University of Technology reassessed the back-translated copy to affirm its equivalence with the English scale.
4. The scale creator made changes to the Chinese version according to the final assessment.
5. A final 16-item ESSA was generated after a pilot test.

Scale Reliability and Validity Summary

Summaries of the reliabilities and validities of both SCOPE and ESSA are provided in Tables 14 and 15.

Ethical Considerations

In the process of sampling selections, ethical considerations are not to be ignored by the research team. Reasonable steps were taken to protect the privacy and confidentiality of the study data. No participant was identified by their name or any identification number (e.g., student ID) during or after the study. All data were transferred from the online survey program and kept on a password-protected computer. The only persons who had access to the research records were members of the research team.

Table 14

Reliability of SCOPE and ESSA

Scales	Subscales	Internal Reliability (Cronbach's alpha)	Test-retest reliability (correlation coefficients)
SCOPE	N/A	.865	Pearson's *r* = .870 Spearman's rho = .852
ESSA		.81	ICCs = .78
	Pressure from study	.74	ICCs = .75
	Workload	.75	ICCs = .61
	Worry about grades	.71	ICCs = .70
	Self-expectation stress	.66	ICCs = .59
	Study despondency	.66	ICCs = .62

Note. ICCs = intraclass correlation coefficients

Table 15

Validity of SCOPE and ESSA

Scales	Subscales of ESSA	Content validity	Construct validity		Criterion validity	
			Variance%	Eigenvalue	Concurrent, AESI as the criterion	Predictive, CES-D & suicidality as the criteria
SCOPE		Obtained with an expert panel of 6 people	55.269	NA	Not provided	Not provided
ESSA		Not provided	63.6	Not provided	.51*	CES-D = .47* Suicidality = .17*
	Pressure from study	Not provided	26.6	4.26	.29*	CES-D = .38* Suicidality = .12*
	Workload	Not provided	14.4	2.30	-.03	CES-D = .25* Suicidality = .13*
	Worry about grades	Not provided	8.2	1.31	.52*	CES-D = .15* Suicidality = .04
	Self-expectation	Not provided	7.6	1.22	.83*	CES-D = .24* Suicidality = .03
	Despondency	Not provided	6.7	1.07	.07	CES-D = .44* Suicidality = .21*

Note. AESI = Academic Expectation Stress Inventory; CES-D = Center for Epidemiological Studies-Depression Scale; *$p < .05$

Data Collection Procedures

The data collection process included several steps: preparation for IRB approval, translation of the English SCOPE ~~scale~~ into Chinese, a pilot study of students, and administration of the online survey. The procedure was as follows:

1. I prepared a site permission letter, recruitment letter, and informed consent form for IRB approval.
2. The site permission letter, recruitment letter, and consent form were all translated into Chinese, given the study took place in mainland China.
3. The Chinese version of ESSA was used and validated in China; therefore, the Chinese version was used in my study.
4. SCOPE was translated from English into Chinese using the backward translation method, and the Chinese version was used in my study.
5. A pilot test was conducted with a group of 10 students from my class to ensure the Chinese version of SCOPE was appropriate to be delivered to the wider population.
6. Upon IRB approval, the recruitment letter, the invitation with the link to the informed consent form, and surveys were sent to an online group through the Chinese social network platform (Wechat) that students and professors used to communicate, particularly during the COVID crisis.
7. Students in the group who saw the invitation decided on their participation.
8. Participants were given 2 weeks to complete the online surveys voluntarily after receiving the informed consent forms online.
9. After 2 weeks, the invitation was sent again as a reminder, and the link remained open until an adequate sample size (100+) for statistical analysis was gathered.

10. The Survey was web-administered using Wenjuanxing—a Chinese web-based survey tool like Qualtrics.
11. I collected data from 163 participants who completed SCOPE and 172 participants who completed ESSA.
12. Based on consultation from the technician of Wenjuanxing, I combined the two surveys into one using three criteria: the website from which students logged on to complete surveys, the location participants came from, and their self-reported GPA. The three pieces of information remained the same for the two surveys, indicating the same participant completed the two surveys simultaneously.
13. After data collection, collation, and eliminating missing data, 144 participants remained who completed both SCOPE and ESSA.
14. For GPA, 31 cases were deleted due to incorrect input (missing data or outside the range of 0-4), which resulted in GPAs from 113 participants.

Summary

This chapter introduced how I conducted the research for this study, how the participants were recruited, and how the sample was derived. I illustrated in detail the construction of the SCOPE and ESSA instruments including information regarding reliability and validity. Because the study was conducted in China, Chinese versions of both scales were used. In the next chapter, the results are presented.

CHAPTER 4: RESULTS

This chapter presents results from the data analysis of the seven research questions presented in Chapter 1. The data analysis procedures consisted of descriptive analyses, correlation analyses, and mean comparisons analyses. The descriptive statistics include participant demographics and means and standard deviations for the dependent variables. Correlations were used to examine (a) the relationship between students' contemplativity and their perceived academic stress, (b) the association between students' contemplativity and their cumulative GPA, and (c) the relationship between students' cumulative GPA and their perceived academic stress. The mean difference comparisons were analyzed through independent samples *t*-tests and Cohen's *d* effect sizes between genders and academic emphases (i.e., education and business) on the dependent variables of contemplativity and academic stress. Table 16 summarizes the research questions and analysis methods applied in the study.

Descriptive Statistics and Correlation Analysis

The results among the variables are presented via the major research questions. Further analysis is presented regarding relationships among the dependent variables and subtests.

Correlation Between SCOPE and ESSA

This section presents the result of the correlation between participants' contemplativity and their academic stress which was addressed by RQ1. In addition, relationships between SCOPE and five subsets of ESSA were examined.

RQ1. Is there a relationship between Chinese undergraduates' contemplativity and their academic stress?

Table 16

Research Questions and Analysis Methods

Research questions	Analysis method
RQ1: Is there a relationship between Chinese undergraduates' contemplativity and their academic stress?	Pearson product-moment correlation coefficient Effect size (*r*-square)
RQ2. Is there a relationship between Chinese undergraduates' cumulative GPA and their contemplativity?	Pearson product-moment correlation coefficient Effect size (*r*-square)
RQ3. Is there a relationship between Chinese undergraduates' cumulative GPA and their academic stress?	Pearson product-moment correlation coefficient Effect size (*r*-square)
RQ4. Is there a difference in contemplativity between female Chinese undergraduates and male Chinese undergraduates?	Independent samples - test Effect size (Cohen's *d)*
RQ5. Is there a difference in contemplativity between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?	Independent samples *t* -test Effect size (Cohen's *d*)
RQ6. Is there a difference in academic stress between female Chinese undergraduates and male Chinese undergraduates?	Independent samples *t*-test Effect size (Cohen's *d*)
RQ7: Is there a difference in academic stress between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?	Independent samples *t*-test Effect size (Cohen's *d*)

Initially, I listed the mean, standard deviation, and range of the three main variables namely, SCOPE, ESSA, and GPA to help interpret correlations among the variables (see Table 17).

Table 17

Descriptive Statistics of the Primary Variables

Variables	*M*	*SD*	Range
SCOPE	101.25	14.92	150-30=120
ESSA	43.67	9.92	80-16=64
GPA	2.88	.64	4-0=4

Note. For SCOPE & ESSA, $N = 144$. For GPA, $N = 113$

The relationship between overall contemplativity (as measured by SCOPE) and perceived academic stress (as measured by ESSA) was examined using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figures 2, 3, & 4). There was a small, statistically significant positive correlation between the two variables, $r = .25$, $r^2 = .06$, $n = 144$, $t_{(142)} = 3.07$, $p < .05$ with higher levels of contemplativity associated with lower levels of stress. Contemplativity explained 6% of the variance in participants' scores on perceived academic stress and vice versa (see Tables 18 & 19).

Figure 2

Scatterplot Showing Correlation Between Total Scores of SCOPE and Total Scores of ESSA With 144 Participants

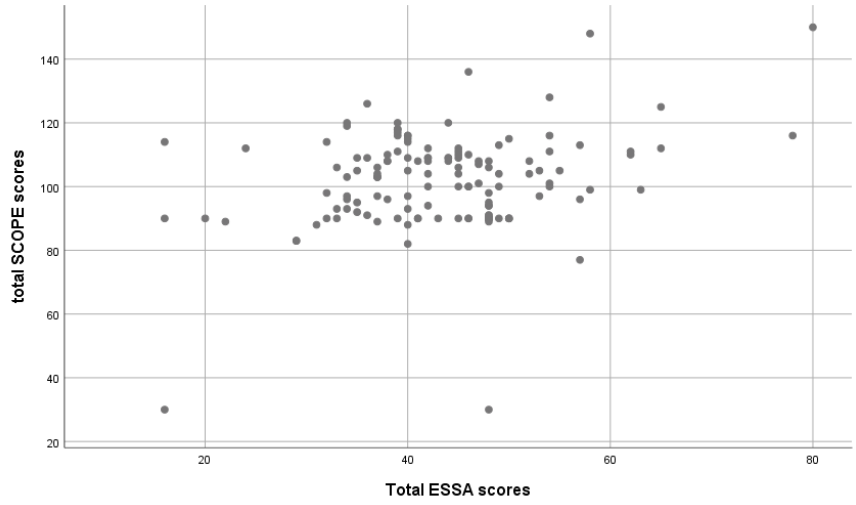


Figure 3

Simple Histogram of Total SCOPE Scores

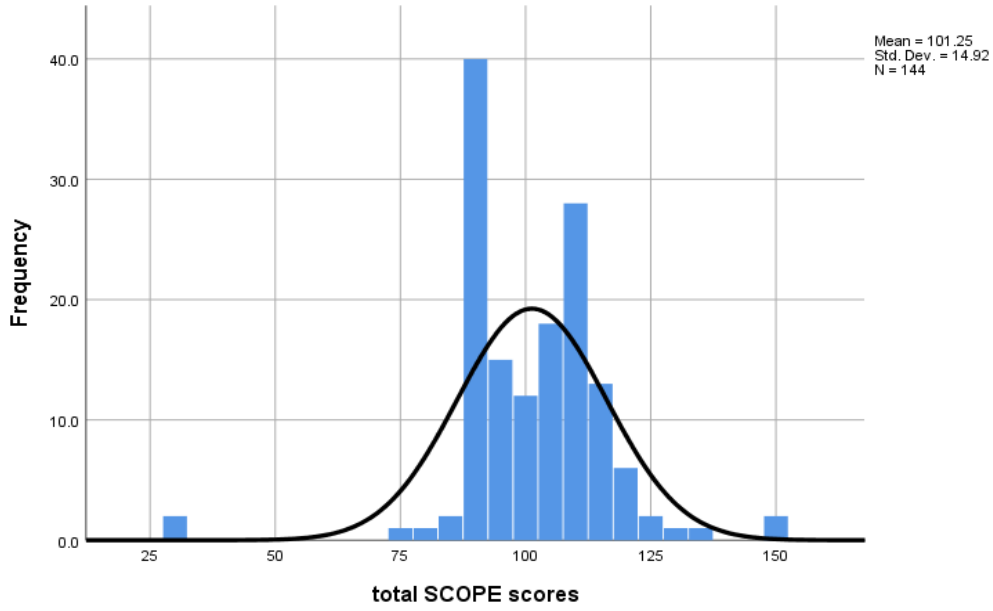


Figure 4

Simple Histogram of Total ESSA Scores

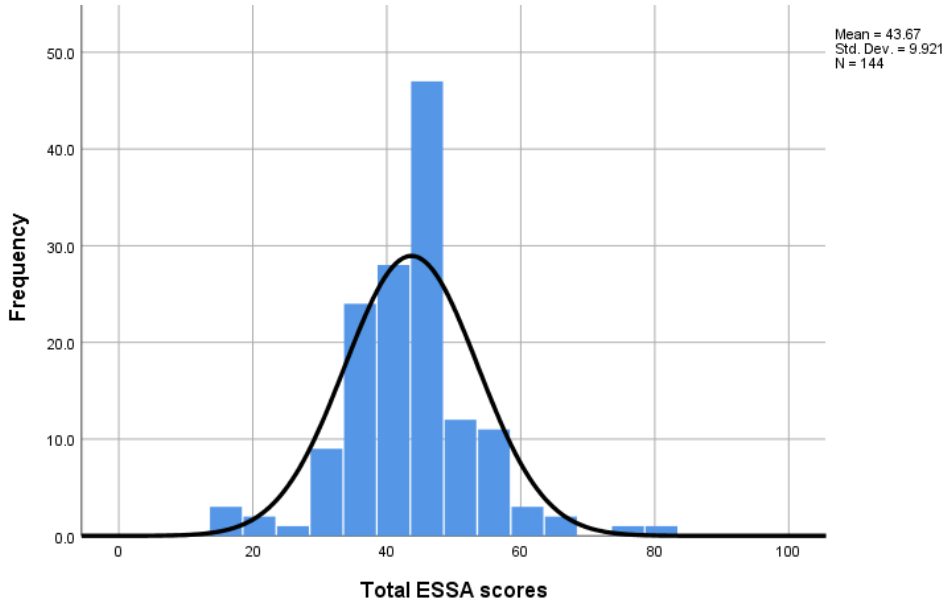


Table 18

Descriptive Statistics for Total SCOPE and ESSA Scores

Variable	Mean	Std. deviation	*N*
Total SCOPE scores	101.25	14.920	144
Total ESSA scores	43.67	9.921	144

Table 19

Correlations Between Total SCOPE Scores and Total ESSA Scores

Primary variables	Method and sig.	Total SCOPE scores	Total ESSA scores
Total SCOPE scores	Pearson correlation	-	.253**
	Sig. (two-tailed)		.002
	N	144	144
Total ESSA scores	Pearson correlation	.253**	-
	Sig. (two-tailed)	.002	
	N	144	144

Note.** represents correlation is significant at the 0.01 level (two-tailed).

To further explore potential relationships, correlations between the total score of SCOPE and scores from each of the five subscales of ESSA with 144 participants were examined. Supporting tables for the subtests are presented in Appendix A and supporting figures in Appendix B.

Is there a relationship between Chinese undergraduates' contemplativity and their pressure from study?

The relationship between overall contemplativity (as measured by SCOPE) and pressure from study (as measured by Subscale 1 of ESSA) was investigated using a Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figures B1 & B2 in Appendix

B). There was a medium, statistically significant positive correlation between the two variables, $r = .32$, $r^2 = .10$, $n = 144$, $t_{(142)} = 4.02$, $p < .05$ with higher levels of contemplativity associated with lower levels of pressure from study. Contemplativity explained 10% of the variance in participants' scores on pressure from study, and vice versa (see Tables A1 & A2 in Appendix A).

Is there a relationship between Chinese undergraduates' contemplativity and their workload?

The relationship between overall contemplativity (as measured by SCOPE) and workload (as measured by Subscale 2 of ESSA) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figures B3 & B4 in Appendix B). There was a small, statistically significant positive correlation between the two variables, $r = .28$, $r^2 = .08$, $n = 144$, $t_{(142)} = 3.47$, $p < .05$ with higher levels of contemplativity associated with lower levels of workload. Contemplativity explained 8% of the variance in participants' scores on workload, and vice versa (see Tables A3 & A4 in Appendix A).

Is there a relationship between Chinese undergraduates' contemplativity and their worry about grades?

The relationship between overall contemplativity (as measured by SCOPE) and worry about grades (as measured by ESSA Subscale 3) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figures B5 & B6 in Appendix B). There was a small positive correlation between the two variables, $r = .14$, $r^2 = .02$, $n = 144$, $t_{(142)} = 1.69$, $p > .05$ with higher levels of contemplativity associated with lower levels of worry about grades. The correlation was not statistically significant. Contemplativity explained 2% of

the variance in participants' scores on worry about grades, and vice versa (see Tables A5 & A6 in Appendix A).

Is there a relationship between Chinese undergraduates' contemplativity and their self-expectation stress?

The relationship between overall contemplativity (as measured by SCOPE) and self-expectation stress (as measured by Subscale 4 of ESSA) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figures B7 & B8 in Appendix B). There was a very weak, non-significant correlation between the two variables, $r = .05$, $r^2 = .00$, $n = 144$, $t_{(142)} = 0.60$, $p > .05$ (see Tables A7 & A8 in Appendix A).

Is there a relationship between Chinese undergraduates' contemplativity and their study despondency?

The relationship between overall contemplativity (as measured by SCOPE) and study despondency (as measured by Subscale 5 of ESSA) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figures B9 & B10 in Appendix B). There was a small, statistically significant positive correlation between the two variables, $r = .23$, $r^2 = .05$, $n = 144$, $t_{(142)} = 2.81$, $p < .05$ with higher levels of contemplativity associated with lower levels of study despondency. Contemplativity explained 5% of the variance in participants' scores on study despondency, and vice versa (see Tables A9 & A10 in Appendix A).

Correlation Between GPA and SCOPE

RQ2. Is there a relationship between Chinese undergraduates' cumulative GPA and their contemplativity?

Descriptive statistics for GPA were offered to further analyze the correlation between participants' GPA and SCOPE scores (see Table 20).

Table 20

Descriptive Statistics for GPA

Variable	*N*	Range	Mean	Std. deviation
GPA	113	4	2.88	.639
Valid *N*	113			

The relationship between overall contemplativity (as measured by total scores of SCOPE) and GPA (as measured by total scores of GPA) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figures 5 & 6). There was a weak correlation between the two variables, $r = .09$, $r^2 = .01$, $n = 113$, $t_{(111)} = .95$, $p > .05$ (Cohen, 1988). The correlation was not statistically significant (see Tables 21 & 22).

Table 21

Descriptive Statistics for SCOPE and GPA

Main Variables	Mean	Std. Deviation	*N*
Total SCOPE scores	101.30	15.114	113
GPA	2.88	.639	113

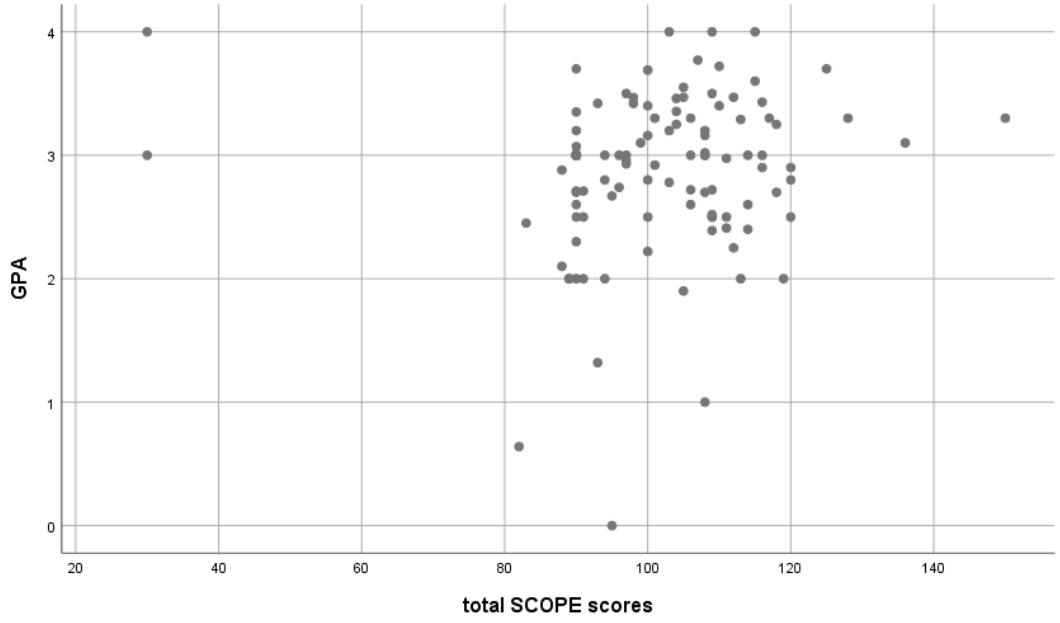
Table 22

Correlations Between SCOPE Scores and GPA

Main Variables	Method & Sig.	Total SCOPE Scores	GPA
Total SCOPE scores	Pearson correlation	-	.094
	Sig. (two-tailed)		.322
	N	113	113
GPA	Pearson correlation	.094	-
	Sig. (two-tailed)	.322	
	N	113	113

Figure 5

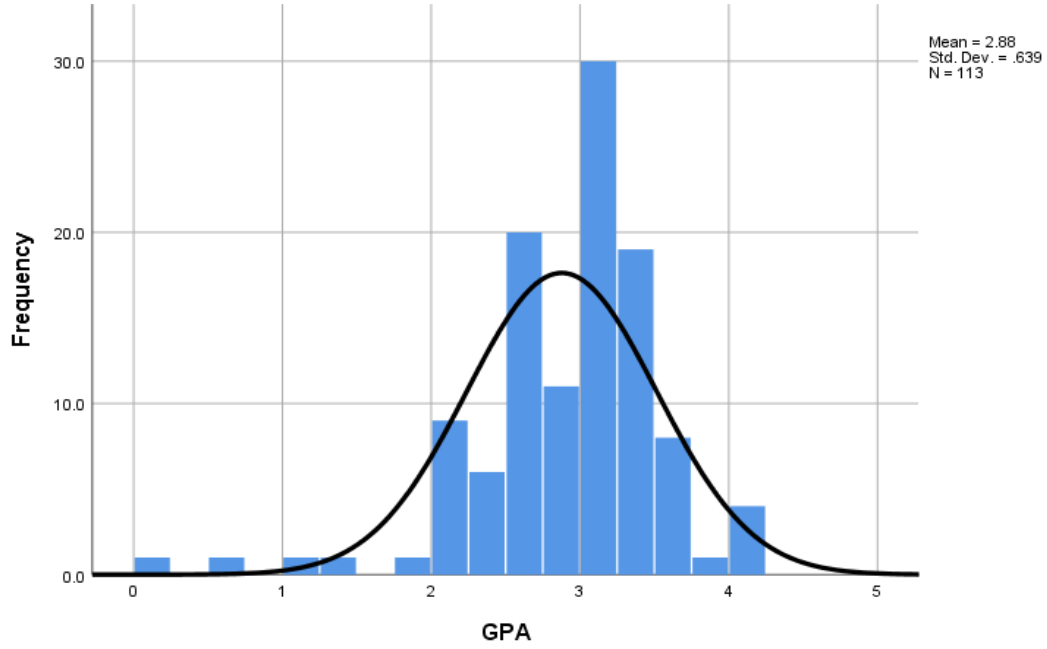
Scatterplot Showing Correlation Between GPA and SCOPE



Note. $N = 113$

Figure 6

Simple Histogram of GPA



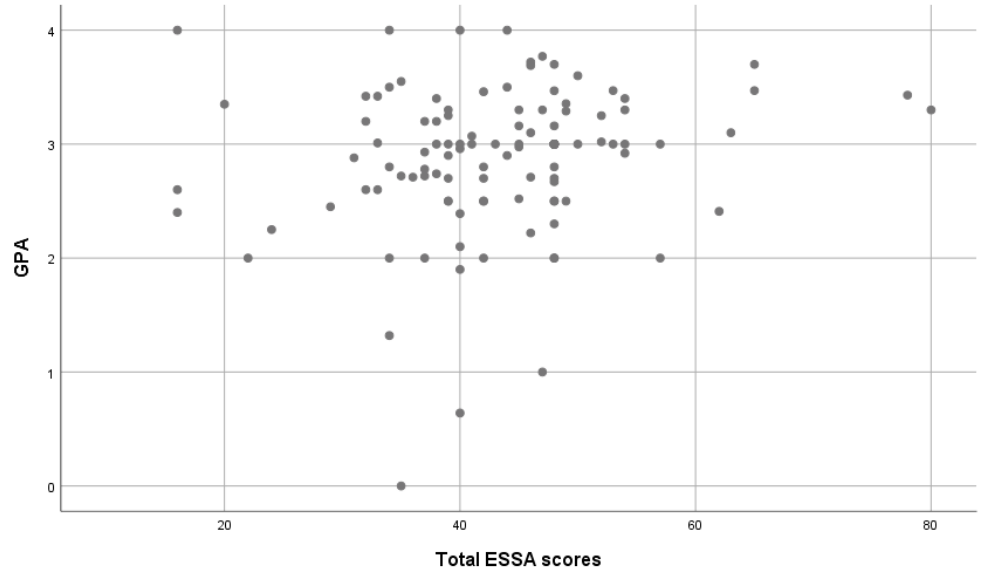
Correlation Between GPA and ESSA

RQ3. Is there a relationship between Chinese undergraduates' cumulative GPA and their academic stress?

The relationship between GPA (as measured by total scores of GPA) and overall stress (as measured by total scores of ESSA) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figure 7). There was a small correlation between the two variables, $r = .17$, $r^2 = .03$, $n = 113$, $t_{(111)} = 1.82$, $p > .05$ with higher scores of GPA associated with lower levels of stress. The correlation was not statistically significant. GPA explained 3% of the variance in participants' scores of ESSA, and vice versa (see Table 23).

Figure 7

Scatterplot Showing Correlation Between Scores of GPA and ESSA



Note. N = 113

Table 23

Correlations Between GPA and Total ESSA Scores

Main variables	Method & sig.	GPA	Total ESSA scores
GPA	Pearson correlation	1	.172
	Sig. (two-tailed)		.069
	N	113	113
Total ESSA scores	Pearson correlation	.172	1
	Sig. (two-tailed)	.069	
	N	113	113

To further explore potential relationships, correlations were conducted between the total score of the GPA and scores from each of the five subscales of ESSA with 113 participants. The supporting tables for the subtests are presented in Appendix A and supporting figures in Appendix B.

Is there a relationship between Chinese undergraduates' cumulative GPA and their pressure from study?

The relationship between GPA (as measured by total scores of GPA) and pressure from study (as measured by Subscale 1 of ESSA) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figure B11 in Appendix B). There was a small positive correlation between the two variables, $r = .17$, $r^2 = .03$, $n = 113$, $t_{(111)} = 1.82$, $p > .05$ with higher scores of GPA associated with lower levels of pressure from study. The correlation was not statistically significant. GPA explained 3% of the variance in participants' scores on pressure from study, and vice versa (see Tables A11 & A12 in Appendix A).

Is there a relationship between Chinese undergraduates' cumulative GPA and their workload?

The relationship between GPA (as measured by total scores of GPA) and workload (as measured by Subscale 2 of ESSA) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figure B12 in Appendix B). There was a small positive correlation between the two variables, $r = .14$, $r^2 = .02$, $n = 113$, $t_{(111)} = 1.49$, $p > .05$ with higher scores of GPA associated with lower levels of workload. The correlation was not statistically significant. GPA explained 2% of the variance in participants' scores on the workload subscale, and vice versa (see Table A13 in Appendix A).

Is there a relationship between Chinese undergraduates' cumulative GPA and their worry about grades?

The relationship between GPA (as measured by total scores of GPA) and worry about grades (as measured by the subscale 3 of ESSA) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figure B13 in Appendix B). There was a weak positive correlation between the two variables, $r = .06$, $r^2 = .00$, $n = 113$, $t_{(111)} = 0.63$, $p > .05$ (Cohen, 1988). The correlation was not statistically significant (see Table A14 in Appendix A).

Is there a relationship between Chinese undergraduates' cumulative GPA and their self-expectation stress?

The relationship between GPA (as measured by total scores of GPA) and self-expectation stress (as measured by scores on the subscale 4 of ESSA) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity (see Figure B14 in Appendix B). There was a weak positive correlation between the two variables, $r = .09$, $r^2 = .00$, $n = 113$, $t_{(111)} = 0.95$, $p > .05$ (Cohen, 1988). The correlation was not statistically significant (see Table A15 in Appendix A).

Is there a relationship between Chinese undergraduates' accumulative GPA and their study despondency?

The relationship between GPA (as measured by total scores of GPA) and study despondency (as measured by scores on Subscale 5 of ESSA) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no

violation of the assumptions of normality, linearity, and homoscedasticity (see Figure B15 in Appendix B). There was a small, statistically significant, positive correlation between the two variables, $r = .24$, $r^2 = .06$, $n = 113$, $t_{(111)} = 2.61$, $p < .05$ with higher GPA associated with lower levels of study despondency. GPA explained 6% of the variance in participants' scores on study despondency, and vice versa (see Table A16 in Appendix A).

Mean Comparison Analyses

This section presents mean difference analyses between genders and between academic emphases on scores of SCOPE and ESSA (RQ4, RQ5, RQ6, and RQ7).

Mean Comparison Between Female and Male Participants on SCOPE Scores

RQ4: Is there a difference in contemplativity between female Chinese undergraduates and male Chinese undergraduates?

Descriptive statistics for gender and total SCOPE scores of male and female participants are provided to examine mean differences on SCOPE scores (see Tables 24 & 25).

Table 24

Descriptive Statistics for Gender

Gender	Frequency	%	Valid percent	Cumulative percent
Male	41	28.5	28.5	28.5
Female	101	70.1	70.1	98.6
Prefer not to answer	2	1.4	1.4	100.0
Total	144	100.0	100.0	

Table 25

Descriptive Statistics of SCOPE Scores of Both Genders

Primary Variable	Gender	*N*	Mean	Std. deviation	Std. error mean
Total SCOPE scores	Male	41	101.02	19.768	3.087
	Female	101	101.50	12.669	1.261

Checking Assumptions

The significant value for Levene's test is less than .05 ($p = .00 < .05$), which indicates the variances for the two groups (males, females) are not the same. Therefore, the data in the second line (equal variances not assumed) should be applied (Pallant, 2016; see Table 26).

Table 26

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Total SCOPE scores	Equal variances assumed	8.470	.004	-.169	140	.866	-.471	2.786	-5.978	5.037
	Equal variances not assumed			-.141	53.851	.888	-.471	3.335	-7.157	6.215

Mean Differences Between Groups

An independent-samples *t* test was conducted to compare total contemplativity scores for male and female participants. There was no significant difference between the scores for males (M = 101.02, SD = 19.77) and females (M = 101.50, SD = 12.67; $t_{(53.85)}$ = -.14, p = .89, two-tailed). The magnitude of the effect size of differences in the means (mean difference = -.47, 95% CI [-7.2, 6.2] was very small (Cohen's d = .03; Cohen, 1988; see Table 26).

Mean Comparison Between Education and Business Academic Emphases on SCOPE Scores

RQ5. Is there a difference in contemplativity between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

Descriptive statistics for college emphases and the total SCOPE score of students of both emphases were conducted to examine mean differences further (see Table 27 & 28).

Table 27

Descriptive Statistics for College Emphases

Study Emphases	Frequency	Percent	Valid percent	Cumulative percent
Education	77	53.5	53.5	53.5
Business	67	46.5	46.5	100.0
Total	144	100.0	100.0	

Table 28

Descriptive Statistics for SCOPE Scores Achieved by Participants of Both Emphases

	Emphasis	*N*	Mean	Std. deviation	Std. error mean
Total SCOPE scores	Education	77	99.57	13.568	1.546
	Business	67	103.18	16.226	1.982

Checking Assumptions

The significance value for Levene's test was larger than .05 ($p = .59 > .05$), which indicated the variances for the two groups (males, females) were the same. Therefore, data in the first line (equal variances assumed) should be applied (Pallant, 2016; see Table 29).

Assessing Differences Between Groups

An independent samples *t* test was conducted to compare the contemplativity scores for the two groups (i.e., education emphasis and business emphasis). There was no significant mean difference between the scores for students with an education emphasis ($M = 99.57$, $SD = 13.57$) and students with a business emphasis ($M = 103.18$, $SD = 16.23$; $t_{(142)} = -1.45$, $p = .15$, two-tailed). The magnitude of the effect size (mean difference = -3.6, 95% CI [-8.52,1.30] was small (Cohen's $d = .24$; Cohen, 1988; see Table 29).

Table 29

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Total SCOPE scores	Equal variances assumed	.298	.586	-1.453	142	.148	-3.608	2.483	-8.516	1.301
	Equal variances not assumed			-1.435	129.208	.154	-3.608	2.514	-8.582	1.366

Mean Comparison Between Male and Female Participants on ESSA Scores

RQ6: Is there a difference in academic stress between female Chinese undergraduates and male Chinese undergraduates?

Descriptive statistics for the total ESSA scores of male and female participants were conducted to examine the mean difference (see Table 30).

Table 30

Descriptive Statistics of Total ESSA Scores Achieved by Both Genders

Primary Variable	Gender	*N*	Mean	Std. deviation	Std. error mean
Total ESSA scores	Male	41	44.85	12.385	1.934
	Female	101	43.10	8.811	.877

Checking Assumptions

The significance value for Levene's test was larger than .05 ($p = .103 > .05$), which indicated the variances for the two groups (males, females) were the same. Therefore, data in the first line (equal variances assumed) should be applied (see Table 31).

Table 31

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Total ESSA scores	Equal variances assumed	2.686	.103	.951	140	.343	1.755	1.845	-1.893	5.402
	Equal variances not assumed			.826	57.160	.412	1.755	2.124	-2.497	6.007

Assessing Differences Between Male and Female Participants

An independent-samples *t* test was conducted to compare the scores on ESSA for male and female participants. There was no significant difference between the scores for males (M = 44.85, SD = 12.39) and females (M = 43.1, SD = 8.81; $t_{(140)} = -.95$, $p = .34$, two-tailed). The magnitude of the differences in the means (mean difference = 1.76, 95% CI [-1.89, 5.4]) was very small (Cohen's $d = .16$; Cohen, 1988; see Table 31).

The subsequent analyses further explored the mean differences between male and female participants on scores of the five subscales of ESSA. The supporting tables for the subtests are presented in Appendix A.

Is there a difference in pressure from study between female Chinese undergraduates and male Chinese undergraduates?

Scores on pressure from study subscale attained by both genders are presented to examine the mean difference between male and female participants (see Table A17 in Appendix A).

Checking Assumptions

The significance value for Levene's test was less than .05 ($p = .026 < .05$), which indicated the variances for the two groups (males, females) were not the same. Therefore, data in the second line (equal variances not assumed) should be applied (see Table A18 in Appendix A).

Difference Between Genders

An independent-samples *t* test was conducted to compare the scores of pressure from study for males and females. There was no significant difference in the scores for males ($M = 11.66$, $SD = 3.56$) and females ($M = 10.98$, $SD = 2.46$; $t(56) = 1.12$, $p = .27$, two-tailed). The magnitude of the differences in the means (mean difference = .68, 95% CI [-.54 to 1.9]) was small (Cohen's $d = .22$; Cohen, 1988; see Table A18 in Appendix A).

Is there a difference in workload between female Chinese undergraduates and male Chinese undergraduates?

Descriptive statistics of workload scores by both genders are presented for analysis of the mean difference between males and females on the workload subscale (see Table A19 in Appendix A).

Checking Assumptions

The significance value for Levene's test was less than .05 ($p = .045 < .05$), which indicated the variances for the two groups (males, females) were not the same. Therefore, data in the second line (equal variances not assumed) should be applied (see Table A20 in Appendix A).

Differences Between Genders

An independent-samples *t* test was conducted to compare the scores of workload for males and females. There was no significant difference in the scores for males ($M = 8.56$, $SD = 2.7$) and females ($M = 8.49$, $SD = 1.97$; $t(58) = .16$, $p = .87$, two-tailed). The magnitude of the

differences in means (mean difference = .08, 95% CI [-.86, 1] was very small (Cohen's d = .03; Cohen, 1988; see Table A20 in Appendix A).

Is there a difference in worry about grades between female Chinese undergraduates and male Chinese undergraduates?

Descriptive statistics of both genders on scores of worry about grades were presented to examine the mean difference between males and females on scores of worry about grades (see Table A21 in Appendix A).

Checking Assumptions

The significance value for Levene's test was larger than .05 (p = .15 > .05), which indicated the variances for the two groups (males, females) are the same. Therefore, data in the first line (equal variances assumed) should be applied (see Table A22 in Appendix A).

Differences Between Genders

An independent-samples t test was conducted to compare the scores of worry about grades for males and females. There was no significant difference in the scores for males (M = 8.29, SD = 2.87) and females (M = 8.22, SD = 2.19; $t_{(140)}$ = .17, p = .87, two-tailed). The magnitude of the differences in means (mean difference = .08, 95% CI [-.81, .96]) was very small (Cohen's d = .03; Cohen, 1988; see Table A22 in Appendix A).

Is there a difference in self-expectation stress between female Chinese undergraduates and male Chinese undergraduates?

Descriptive statistics of both genders on scores of self-expectation stress were presented to examine the mean difference between male and female students on scores of self-expectation stress (see Table A23 in Appendix A).

Checking Assumptions

The significance value for Levene's test is larger than .05 ($p = .25 > .05$), which indicated the variances for the two groups (males, females) were the same. Therefore, data in the first line (equal variances assumed) should be applied (see Table A24 in Appendix A).

Difference Between Genders

An independent-samples *t* test was conducted to compare the scores of self-expectation stress for male and female students. There was no significant difference in the scores for males ($M = 7.54$, $SD = 2.64$) and females ($M = 7.3$, $SD = 2.21$; $t\ (140) = .55$, $p = .58$, two-tailed). The magnitude of the differences in the means (mean difference = .24, 95% CI [-.62, 1.10] was very small (Cohen's $d = .10$; Cohen, 1988; see Table A24 in Appendix A).

Is there a difference in study despondency between female Chinese undergraduates and male Chinese undergraduates?

Descriptive statistics of both genders on study despondency scores were presented to examine the mean difference between male and female participants on scores of study despondency (see Table A25 in Appendix A).

Checking Assumptions

The significance value for Levene's test was larger than .05 ($p = .26 > .05$), which indicated the variances for the two groups (males, females) were the same. Therefore, data in the first line (equal variances assumed) should be applied (see Table A26 in Appendix A).

Difference Between Genders

An independent-samples *t* test was conducted to compare the scores of study despondency for male and female participants. There was no significant difference in the scores for males ($M = 8.8$, $SD = 2.72$) and females ($M = 8.12$, $SD = 2.24$; $t\ (140) = 1.55$, $p = .12$, two-

tailed). The magnitude of the differences in the means (mean difference = .69, 95% CI [-.19 to 1.56] was small (Cohen's *d* = .27; Cohen, 1988; see Table A26 in Appendix A).

Mean Comparison Between Education and Business Academic Emphases on ESSA Scores

RQ7: Is there a difference in academic stress between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

Descriptive statistics of both study emphases on ESSA scores were presented to examine the mean difference between the two study concentrations on ESSA scores (see Table 32).

Table 32

Descriptive Statistics of Both Study Emphases on Total ESSA Scores

Primary variable	Emphasis	*N*	Mean	Std. deviation	Std. error mean
Total ESSA scores	Education	77	43.26	9.772	1.114
	Business	67	44.13	10.144	1.239

Checking Assumptions

The significance value for Levene's test was larger than .05 ($p = .74 > .05$), which indicated the variances for the two groups (education, business) were the same. Therefore, data in the first line (equal variances assumed) should be applied (see Table 33).

Table 33

Independent Samples Test

		Levene's test for equality of variances		*t* test for Equality of Means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Total ESSA scores	Equal variances assumed	.115	.735	-.526	142	.600	-.875	1.662	-4.160	2.410
	Equal variances not assumed			-.525	137.666	.600	-.875	1.666	-4.169	2.420

Assessing Differences Between Groups

An independent-samples *t* test was conducted to compare the scores of ESSA for students with education emphasis and students with business emphasis. There was no significant difference in the scores for education (M = 43.26, SD = 9.77) and business (M = 44.13, SD = 10.14; t (142) = -.53, p = .6, two-tailed). The magnitude of the differences in the means (mean difference = -.88, 95% CI [-4.16, 2.41] was very small (Cohen's d = .09; Cohen, 1988; see Table 33).

The next analyses further delved into mean differences between the two academic emphases on scores of the five subscales of ESSA. The supporting tables for the subtests are presented in Appendix A.

Is there a difference in pressure from study between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

Descriptive statistics of both study emphases on scores of pressure from study were provided to examine the mean difference between emphases of education and business on scores of pressure from study (see Table A27 in Appendix A).

Checking Assumptions

The significance value for Levene's test was larger than .05 ($p = .79 > .05$), which indicated the variances for the two groups (education, business) were the same. Therefore, data in the first line (equal variances assumed) should be applied (see Table A28 in Appendix A).

Assessing Difference Between Groups

An independent-samples *t* test was conducted to compare the scores of pressure from study for education and business. There was no significant difference in the scores for education ($M = 11.16$, $SD = 2.72$) and business ($M = 11.18$, $SD = 2.94$; $t\ (142) = -.05$, $p = .96$, two-tailed). The magnitude of the differences in the means (mean difference = -.02, 95% CI [-.96, .91] was very small (Cohen's $d = .01$; Cohen, 1988; see Table A28 in Appendix A).

Is there a difference in workload between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

Descriptive statistics of both study emphases on workload scores were presented to help analyze the mean difference between emphases of education and business on workload scores (see Table A29 in Appendix A).

Checking Assumptions

The significance value for Levene's test was larger than .05 ($p = .76 > .05$), which indicated the variances for the two groups (education, business) were the same. Therefore, data in the first line (equal variances assumed) should be applied (see Table A30 in Appendix A).

Assessing Differences Between Groups

An independent-samples *t* test was conducted to compare the scores of workload for education and business. There was no significant difference in the scores for education ($M = 8.47$, $SD = 2.1$) and business ($M = 8.57$, $SD = 2.34$; $t\ (142) = -.27$, $p = .79$, two-tailed). The magnitude of the differences in the means (mean difference = -.1, 95% CI [-.83, .63] was very small (Cohen's $d = .04$; Cohen, 1988; see Table A30 in Appendix A).

Is there a difference in worry about grades between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

Descriptive statistics of both study concentrations on scores of worry about grades were offered to assist in explaining the mean difference between both emphases of education and business on scores of worry about grades (see Table A31 in Appendix A).

Checking Assumptions

The significant value for Levene's test was larger than .05 ($p = .88 > .05$), which indicated the variances for the two groups (education, business) were the same. Therefore, data in the first line (equal variances assumed) should be applied (see Table A32 in Appendix A).

Assessing Differences Between Groups

An independent-samples *t* test was conducted to compare the scores of worry about grades for education and business participants. There was no significant difference in the scores for education ($M = 8.16$, $SD = 2.43$) and business ($M = 8.37$, $SD = 2.36$; $t\ (142) = -.54$, $p = .59$,

two-tailed). The magnitude of the differences in the means (mean difference = -.22, 95% CI [-1.01, .58] was very small (Cohen's *d* = .09; Cohen, 1988; see Table A32 in Appendix A).

Is there a difference in self-expectation stress between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

Descriptive statistics of both study emphases on self-expectation stress scores were presented to help explain the mean difference between both concentrations of education and business on scores of self-expectation stress (see Table A33 in Appendix A).

Checking Assumptions

The significance value for Levene's test was larger than .05 ($p = .38 > .05$), which indicated the variances for the two groups (education, business) were the same. Therefore, data in the first line (equal variances assumed) should be applied (see Table A34 in Appendix A).

Assessing Differences Between Groups

An independent-samples *t* test was conducted to compare the scores of self-expectation stress for education and business. There was no significant difference in the scores for education ($M = 7.26$, $SD = 2.46$) and business ($M = 7.51$, $SD = 2.16$; $t\ (142) = -.64$, $p = .53$, two-tailed). The magnitude of the differences in the means (mean difference = -.25, 95% CI [-1.02, .52] was very small (Cohen's d = .11; Cohen, 1988; see Table A34 in Appendix A).

Is there a difference in study despondency between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

Descriptive statistics of both emphases on study despondency scores were presented to help explain mean difference between both concentrations of education and business on scores of study despondency (see Table A35 in Appendix A).

Checking Assumptions

The significance value for Levene's test was larger than .05 ($p = .3 > .05$), which indicated the variances for the two groups (education, business) were the same. Therefore, the data in the first line (equal variances assumed) should be applied (see Table A36 in Appendix A).

Assessing Differences Between Groups

An independent-samples *t* test was conducted to compare the scores of study despondency for education and business participants. There was no significant difference in the scores for education ($M = 8.22$, $SD = 2.21$) and business ($M = 8.51$, $SD = 2.64$; $t\ (142) = -.71$, $p = .48$, two-tailed). The magnitude of the differences in the means (mean difference = -.29, 95% CI [-1.09, .51] was very small (Cohen's d = .12; Cohen, 1988; see Table A36 in Appendix A).

Summary of the Correlation Analyses

According to Cohen (1988), the correlation coefficient, as effect size, was small at 0.1, medium at 0.3, and large at 0.5. Therefore, SCOPE had small positive correlations with ESSA, indicating higher levels of contemplativity were accompanied by lower levels of academic stress ($r = .25^{*}$). ESSA evidenced a small positive correlation with GPA, but the correlation was not statistically significant ($r = .17$), and GPA had almost no correlation with SCOPE ($r = .09$; see Table 34).

Table 34

Intercorrelations of the Primary Variables

Variables	1	2	3
1. SCOPE	-	.25*	.09
2. ESSA		-	.17
3. Cumulative GPA			-

Note. $N = 144$ when correlation between SCOPE and ESSA; $N = 113$ when correlation among GPA, SCOPE and ESSA
*$p < .05$; SCOPE = Scale of Contemplative Practice in Higher Education; ESSA = Educational Stress Scale for Adolescents

SCOPE had a medium positive correlation with pressure from study ($r = .32$*) and a small positive correlation with workload ($r = .28$*) and study despondency ($r = .23$*), indicating more contemplativity was significantly related to less pressure from study, less workload, and less study despondency. In addition, SCOPE had a small positive correlation with worry about grades, but the correlation was not statistically significant ($r = .14$), and SCOPE had almost no correlation with self-expectation stress ($r = .05$; see Table 35).

Table 35

Intercorrelations of Subscales of ESSA in Relation to Both SCOPE and GPA

Variables / Subscales of ESSA	1	2	3	4	5
1. SCOPE	.32*	.28*	.14	.05	.23*
2. GPA	.17	.14	.06	.09	.24*

Note. $N = 144$ when SCOPE correlates with each subscale of ESSA. $N = 113$ when GPA correlates with each subscale of ESSA.
1 = *pressure from study*; 2 = *workload*; 3 = *worry about grades*; 4 = *self-expectation stress*; 5 = *study despondency*; *$p < .05$

GPA had a small positive correlation with despondency ($r = .24$*), indicating higher GPA was accompanied by lower study despondency. Moreover, GPA had a small positive correlation with both pressure from study ($r = .17$) and workload ($r = .14$), but the correlations were not statistically significant, and GPA had almost no correlation with either worry about grades ($r = .06$) or self-expectation stress ($r = .09$; see Table 35).

Summary of Mean Comparison Analyses

From the means of the two groups, female and male participants evidenced similar scores on SCOPE, indicating no difference in contemplativity (101.5 > 101.02; see Table 36). For the mean ESSA scores, male students reported slightly less academic stress than female students with higher scores indicating less academic stress (44.85 > 43.1; see Table 36). On the mean scores of the five subscales of ESSA, males also reported slightly less stress than females (11.66 > 10.98; 8.56 > 8.49; 8.29 > 8.22; 7.54 > 7.30; 8.8 > 8.12). However, the *p* values (two-tailed) were all above .05, showing no statistically significant difference between the means of the variables (see Table 36). In addition, Cohen's ranged from .03–.27, indicating negligible to small

effect sizes (see Table 36). The magnitude of differences in the means was very small; therefore, the group means were not significantly different on either of the scales (SCOPE and ESSA) or on the five subscales of ESSA.

From the means of the two groups, students with a business emphasis reported more contemplativity than students with education emphasis with higher scores in SCOPE, indicating higher levels of contemplativity (103.18 > 99.57; see Table 37). For the mean ESSA scores, students with a business emphasis reported slightly less academic stress than students with education emphasis with higher scores of ESSA indicating less stress (44.13 > 43.26; see Table 32). For the mean scores of the five subscales of ESSA, students with an education emphasis reported slightly less stress than students within the education emphasis (11.18 > 11.16; 8.57 > 8.47; 8.37 > 8.16; 7.51 > 7.26; 8.51 > 8.22). However, the *p* values (two-tailed) were all above .05, showing no statistically significant difference between the means of the variables (see Table 37). In addition, Cohen's *d* ranges from .01–.24, indicating a negligible to very small effect size (see Table 37). The magnitude of differences in the means was very small; therefore, the group means were not significantly different on either of the scales (SCOPE and ESSA) or on the five subscales of ESSA.

Table 36

Independent Samples t Tests of Gender Difference and Cohen's d Effect Size

Variables and subvariables	Males *N* = 41 *M* ± *SD*	Females *N* = 101 *M* ± *SD*	*F*	*p* *Level*	*t*	*df*	*p* *two-tailed*	Cohen's *d*
SCOPE	101.02 ± 19.77	101.5 ± 12.67	8.47	.004	-.141	53.85	.89	.03
ESSA	44.85 ± 12.39	43.1 ± 8.81	2.69	.10	.95	140	.34	.16
Pressure from study	11.66 ± 3.56	10.98 ± 2.46	5.07	.03	1.12	56.18	.27	**.22**
Workload	8.56 ± 2.70	8.49 ± 1.97	4.09	.05	.16	58	.87	.03
Worry about grades	8.29 ± 2.87	8.22 ± 2.19	2.15	.15	.17	140	.87	.03
Self-expectation stress	7.54 ± 2.64	7.30 ± 2.21	1.33	.25	.55	140	.58	.10
Study despondency	8.8 ± 2.72	8.12 ± 2.24	1.29	.26	1.55	140	.12	**.27**

Table 37

Independent Samples t Tests of Emphasis Difference and Cohen's d Effect Size

Variables and subvariables	Education *N* = 77 *M* ± *SD*	Business *N* = 67 *M* ± *SD*	*F*	*p* *Level*	*t*	*df*	*p* two-tailed	Cohen's *d*
SCOPE	99.57 ± 13.57	103.18 ± 16.23	.30	.59	-.15	142	.15	**.24**
ESSA	43.26 ± 9.78	44.13 ± 10.14	.12	.74	-.53	142	.60	.09
Pressure from study	11.16 ± 2.72	11.18 ± 2.94	.07	.79	-.05	142	.96	.01
Workload	8.47 ± 2.10	8.57 ± 2.34	.09	.76	-.27	142	.79	.04
Worry about grades	8.16 ± 2.43	8.37 ± 2.36	.02	.88	-.54	142	.59	.09
Self-expectation stress	7.26 ± 2.46	7.51 ± 2.16	.79	.38	-.64	142	.53	.11
Study despondency	8.22 ± 2.21	8.51 ± 2.64	1.07	.30	-.71	142	.48	.12

Chapter Summary

This chapter presented the research questions, data analysis procedures, and the results of the correlation and mean comparison analyses. Students' contemplativity and their overall academic stress were significantly and positively correlated, but the effect size was small (r = .25, r^2 = .06). There was no significant correlation between contemplativity and GPA (r = .09, r^2 = .01), or between GPA and academic stress (r = .17, r^2 = .03) for the Chinese undergraduates in the sample. As for the mean comparison analyses, there was no significant mean difference between genders either on academic stress or contemplativity. There also was no significant difference between emphases (education and business) on contemplativity and academic stress. The subsequent chapter discusses (a) the results of the analyses in association with the current literature base, (b) implications of the study, (c) limitations and strengths of the study, (d) directions for prospective research, and (e) a call for action.

CHAPTER 5: DISCUSSION

The major purpose of the study was to explore the relationships among Chinese undergraduates' contemplativity, their perceived academic stress, and their GPA. The study also aimed to examine mean differences between genders and college academic emphases regarding undergraduates' contemplativity scores and their perceived academic stress. This Chapter offers the interpreted results associated with the literature and discusses implications, the limitations and strengths of the study, suggestions for future study, and a call for action.

Summary of the Study

The literature review in Chapter 1 showed that researchers have found relationships between lower academic stress and higher contemplativity and a positive association between GPA and contemplativity in the west. However, no similar literature was found in China. With the aim to bridge the gap in literature regarding Chinese undergraduates, an empirical study was conducted at a private Chinese university to answer the following seven major research questions (RQs):

RQ1. Is there a relationship between Chinese undergraduates' contemplativity and their academic stress?

RQ2. Is there a relationship between Chinese undergraduates' accumulative GPA and their contemplativity?

RQ3. Is there a relationship between Chinese undergraduates' accumulative GPA and their academic stress?

RQ4. Is there a difference in contemplativity between female Chinese undergraduates and male Chinese undergraduates?

RQ5. Is there a difference in contemplativity between Chinese undergraduates with an

education emphasis and Chinese undergraduates with a business emphasis?

RQ6. Is there a difference in academic stress between female Chinese undergraduates and male Chinese undergraduates?

RQ7: Is there a difference in academic stress between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?

Interpretation of the Results

Two tables are presented to address the study results. Table 38 presents the first three research questions, the results of the correlation analyses, and comparisons to previous literature. Table 39 displays the remaining four research questions, the results regarding mean differences between gender and study emphases, and comparisons to previous literature.

Results of the Correlation Analyses Associated with the Literature

RQ1 concerned the association between participants' contemplativity and their academic stress. The results showed a small but significant, positive correlation between the two variables. This correlation indicated that more contemplativity was accompanied by less academic stress. A review of literature including quantitative and qualitative studies indicated students' awareness of CPs helped reduce their stress in schools (see Table 38; Broderick & Metz, 2009; Campion & Rocco, 2009; Mendelson et al., 2010; Schonert-Reichl & Lawlor, 2010; Thomas, 2017; Wall, 2005).

RQ2 explored potential relations between contemplativity and GPA. Although most of the literature regarding RQ2 was qualitative, the two variables in my review were somewhat positively correlated with more contemplativity related to a higher GPA (Nidich et al., 2011; Robinson & Levac, 2018; Rosaen & Benn, 2006). The results in my study indicated no significant correlation between the two variables. This outcome was inconsistent with the

literature review, which indicated students with higher contemplativity were more likely to have higher GPAs in schools than those without or with less contemplativity (see Table 38).

Table 38

Results of the Correlation Analyses in Relation to Literature

Research questions	Results	Consistency	Inconsistency
RQ1: Is there a relationship between Chinese undergraduates' contemplativity and their academic stress?	Contemplativity is significantly positively correlated with academic stress (r = .25, r^2 = .06, $t^{(142)}$ = 3.07, p < .05)	Broderick & Metz (2009); Campion & Rocco (2009); Mendelson et al. (2010); Schonert-Reichl & Lawlor (2010); Thomas (2017); Wall (2005)	
RQ2. Is there a relationship between Chinese undergraduates' cumulative GPA and their contemplativity?	GPA is not significantly correlated with contemplativity (r = .09, r^2 = .01, $t_{(111)}$ = 0.95, p > .05)		Nidich et al. (2011); Robinson and Levac (2018); Rosaen and Benn (2006)
RQ3. Is there a relationship between Chinese undergraduates' cumulative GPA and their academic stress?	GPA is not significantly correlated with academic stress (r = .17, r^2 = .03, $t_{(111)}$ = 1.82, p > .05)	Crystal et al., (1994); Tang & Westwood (2007);	Bryan et al., (2014); Crystal et al., (1994); Lin et al., (2020); Frazier et al., (2019); Travis et al., (2020)

RQ3 examined connections between students' educational stress and their GPA. Most of the literature in my review indicated that students' academic pressure was either negatively (Bryan et al., 2014; Frazier et al., 2019; Lin et al., 2020; Travis et al., 2020) or positively (Crystal et al., 1994) correlated with their academic performance. However, the results in this study

suggested there was no significant correlation between the two variables, which was inconsistent with the much of the literature. Yet, there was also literature in line with my results. Two studies conducted in China and Japan found no significant correlation between students' academic stress and their academic performance (see Table 38; Crystal et al., 1994; Tang & Westwood, 2007).

Results of the Mean Comparison Analyses Related to the Literature

No results were found regarding RQ4, RQ5, RQ7; therefore, I only comment on RQ6. RQ6 investigated the difference in learning stress for both genders. Half of the six pieces of literature in my literature review found that female students experienced more school-related stress than did their male counterparts (Banu et al., 2015; Karaman et al., 2019; Silverman et al., 1995). One study found male students evidenced more learning stress than female students (Mishra, 2018). The results of the current study were in agreement with two studies that found no significant differences between male and female participants on scores of educational pressure; both genders had similar amounts of academic stress (see Table 39; Bjorkman, 2007; Lin et al., 2020).

Table 39

Mean Comparison Analysis in Relation to Literature

Research questions	Results	Consistency	Inconsistency
RQ4. Is there a difference in contemplativity between female Chinese undergraduates and male Chinese undergraduates?	No significant difference in scores for males (M = 101.02, SD = 19.77) and females (M = 101.5, SD = 12.67; t = -.14, p = .89 two-tailed). Mean difference (-.47) was small (Cohen's d = .03)	No results were found.	No results were found.
RQ5. Is there a difference in contemplativity between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?	No significant difference in the scores for education (M = 99.57, SD = 13.57) and business (M = 103.18, SD = 16.23; t = -1.45, p = .15 two-tailed). Mean difference (-3.6) was small (Cohen's d = .24)	No results were found.	No results were found.
RQ6. Is there a difference in academic stress between female Chinese undergraduates and male Chinese undergraduates?	No significant difference in the scores for males (M = 44.85, SD = 12.39) and females (M = 43.1, SD = 8.81; t = -.95, p = .34 two-tailed). Mean difference (1.76) was small (Cohen's d =.16)	Bjorkman (2007); Lin et al., (2020)	Mishra (2018); Karaman et al., (2019); Banu et al., (2015); Silverman et al., (1995)
RQ7: Is there a difference in academic stress between Chinese undergraduates with an education emphasis and Chinese undergraduates with a business emphasis?	No significant difference in the scores of stress for education emphasis (M = 43.26, SD = 9.77) and business emphasis (M = 44.13, SD = 10.14; t = -.53, p = .6 two-tailed). The mean difference (-.88) was small (Cohen's d = .09).	No results were found.	No results were found.

Implications

In reviewing the results of the current study, it appears there are at least three areas in which actions could be taken to facilitate the benefits of CP. These three areas include implications for (a) educators in private universities in China, (b) faculty members teaching in private universities, and (c) self-leadership opportunities for college students at private universities. Each of these implication areas will be addressed in the following sections.

Implications for Policymakers in China's Private Universities

It appears that it could be beneficial for policymakers in private schools to develop contemplative curriculum as part of the school's general education requirements or add CP elements to the school health curriculum given the positive correlation between contemplativity and stress reduction. Although the effect size was small (r = .25) to medium (r = .32), the limited effects should not be ignored because "every little bit helps when it comes to fostering student success" (Waters et al., 2015, p. 129). I suggest school policymakers design specialized courses to guide faculty and undergraduates who find CPs useful and are interested in continuing such practices. Online courses introducing CPs could be attempted so that more students could attend at their convenience. Faculty and staff may also find this beneficial.

Implications for Faculty Members Teaching at China's Private Universities

Faculty members who find CPs helpful could also deliver a brief session of the practices prior to the beginning of each class. Teachers could obtain feedback from students regarding the usefulness of these sessions to determine if student well being was positively affected and school performance increased. As teachers, we frequently strive to attend to the students we serve both academically and mentally, or as Barbezat and Bush (2014) advocated, to "teach to the whole

person" (p. 3). Implementing CP sessions prior to class may be one additional way teachers address student needs that may otherwise go unnoticed.

Implications for College Students at Private Universities in Relation to Self-Leadership

As my results showed, college students with more contemplativity had less academic stress. This outcome implies that self-leadership cultivated and developed through contemplation-based exercise like mindfulness may lead to successful stress management (Myers et al., 2020). According to Myers et al. (2020), mindfulness may give rise to self-leadership, in which undergraduates reduce their academic pressure. The notion of self-leadership was proposed from internal family systems therapy (IFS) four decades ago (Schwartz, 2013). IFS defined self-leadership as similar to self-emotional regulation and self-stress management in connection with contemplation-related praxis like mindfulness exercises. Self-leadership and contemplation were interrelated. The state of contemplation signifies the existence of self-leadership (Sweezy & Ziskind, 2013). Fostering a self-led undergraduate depends partly on developing their cognitive skills in relation to contemplation (Myers et al., 2020). A self-led person was more likely to become an optimistic, positive, and contemplative self, thus more able to address stress (Schwartz, 1995; Sweezy & Ziskind, 2013). Furthermore, Schwartz (1995) found that participants with coping strategies linked with self-leadership resulted in reduced stress, and higher levels of self-leadership were correlated with less serious self-reported stress. Therefore, it may be beneficial for undergraduate students to be encouraged to find opportunities to learn and practice CP which in turn would encourage self-leadership.

Limitations of the Study

A number of limitations of this study warrant mention. First, the sample size was small and was unequal in terms of gender, with 141 female participants and 41 male participants. The

number of female students was 3 times more than that of male students. The reason might be that samples were collected from classes composed of students who were studying English. Originally, classes in the college of foreign languages at the university site consisted of far more female students than male students; some classes had only one male transferred from other college and other classes were comprised only of females. This gender skew could affect the generalizability of the results with the male population seriously underrepresented. Thus, conducting a study where there is greater gender balance would be beneficial.

Second, the research design was a short-term quantitative study that generated data all at one time instead of a long-term study that can track the prospective influences of CPs on students' outcomes. Third, the two scales used in the study were subjective self-report measures, which might inevitably compromise the accuracy of the results since students may give socially desirable answers to the questionnaire and conceal their true feelings. Another limitation is that data were confined to samples from one private university, which could affect the extent to which results may be generalizable to the wider population. Still another weakness is the relatively small sample size below the expected 200 students, with the student participants being restricted to only education and business majors. Finally, because this was a quantitative study the parameters of the study were set and thus no qualitative information could be gleaned from the study. A mixed method study may have provided additional useful information regarding contemplativity.

Strengths of the Study

This study had numerous strengths that are worthy of mention. First, this study used original data rather than existing data to generate results. Second, the research questions filled a gap in the literature base by probing into fields that were not explored in the past. For example,

the research question examining relationships between Chinese undergraduates' contemplativity and their academic stress, and the research question investigating associations between Chinese undergraduates' contemplativity and their GPA had not been previously explored. By examining these three variables and the potential relationships between these variables, this study added to the paucity of research concerning these topics in China. In addition, this study also added to the literature base both in the West and China by exploring the following three areas of research: (a) disparity between genders on contemplativity, (b) discrepancy between participants with an education emphasis and those with a business emphasis on contemplativity, and (c) differences between the two academic emphases on academic stress. Third, the study contributed to the development of the two measurements (SCOPE vs. ESSA) used by adding empirical evidence of Chinese participants regarding scale validity and reliability. Finally, there were interesting and unexpected results in the quantitative analyses: students in this study with a business concentration reported more contemplativity and less academic stress than students with an education emphasis. This difference warrants further study.

Recommendations for Future Research

One potential area for future research might be to explore how today's Chinese undergraduates in private universities cope with academic stress and succeed in schools. Moreover, cross-disciplinary research like the integration of neuroscience, behavioral science, psychology, education, and perhaps religious elements might be more appropriate than a single discipline to more thoroughly examine the variables of contemplativity and academic stress. Third, data collected from students of various educational backgrounds, majoring in a wide range of disciplines, and across universities are warranted to examine the generalizability of the results. Another suggestion is developing a longitudinal study that would follow the potential impact of

CPs on Chinese undergraduates' development and could also trace changes in their perceptions of CPs as they progress in their education and into their careers. In addition, a mixed method study design would generate data that could enrich results yielded by either a single quantitative or solely qualitative design.

Call to Action

It is time for teachers in China to consider practicing brief CPs to see if they work to mitigate students' stress, anxiety, and depression to help them achieve academically. It is time for the policymakers and educators in China to consider making changes to the curriculum, from simply imparting facts and skills to treating students as "the whole person" (Barbezat & Bush, 2014, p. 3). It is time for the Chinese universities to consider attaching more importance to students' well-being in addition to paying attention to GPA by supplementing some elements of CPs into the school curriculum. It is time for the Chinese society to pause regarding the push towards higher financial and economic success so that college students will not feel stressed and anxious from such a fiercely competitive society and consider perhaps focus more on a life of contentment.

Conclusion

Chinese students' contemplativity and their perceived educational stress were found to be significantly correlated, as addressed by RQ1 in this study. Although the effect size was small, it should not be overlooked. Students with higher contemplativity were likely to experience less academic stress. The remaining research questions resulted in neither a statistically significant correlation nor an analytically meaningful mean difference. These results might be due to the outlined limitations. Further research is recommended to study the potentially positive effects of contemplativity in different samples within China and across other cultures.

REFERENCES

Ang, R. P., & Huan, V. S. (2006a). Academic expectations stress inventory: Development, factor analysis, reliability, and validity. *Educational and Psychological Measurement, 66*(3), 522–539. https://doi.org/10.1177/0013164405282461

Ang, R. P., & Huan, V. S. (2006b). Relationship between academic stress and suicidal ideation: Testing for depression as a mediator using multiple regression. *Child Psychiatry & Human Development, 37*(2), 133–143. https://doi.org/10.1007/s10578-006-0023-8

Ang, R. P., Huan, V. S., & Braman, O. R. (2007). Factorial structure and invariance of the academic expectations stress inventory across Hispanic and Chinese adolescent samples. *Child Psychiatry & Human Development, 38*(1), 73–87. https://doi.org/10.1007/s10578-006-0044-3

Aron, A., Aron, E. N., & Coups, E. (2009). *Statistics for psychology (5th ed.)*. Pearson Publishing.

Banu, P., Deb, S., Rao, T., & Vardhan, V. (2015). Perceived academic stress of university students across gender, academic streams, semesters, and academic performance. *Indian Journal of Health and Wellbeing, 6*(3), 231–235. http://www.iahrw.com/index.php/home/journal_detail/19#list

Barbezat, D. P., & Bush, M. (2014). *Contemplative practices in higher education*. Jossey-Bass.

Becker, A. L. (2017). Personal transformation in RNs who recently graduated from an RN to BSN program. *Journal of Transformative Education*, *15*(4), 315–333. https://doi.org/10.1177/1541344617696971

Bjorkman, S. M. (2007). *Relationships among academic stress, social support, and internalizing and externalizing behavior in adolescence* (Unpublished doctoral dissertation). Northern Illinois University, Illinois.

Brady, R. (2005). Learning to stop; stopping to learn: Embarking on the contemplative learning path. *Sidwell Friends School*, 1–17. https://www.researchgate.net/publication/252705727_Learning_to_Stop_Stopping_to_Learn_Embarking_on_the_Contemplative_Learning_Path

Brady, R. (2007). Learning to stop, stopping to learn: Discovering the contemplative dimension in education. *Journal of Transformative Education, 5*(4), 372–394. https://doi.org/10.1177/1541344607313250

Broderick, P., & Metz, S. (2009). Learning to BREATHE: A pilot trial of a mindfulness curriculum for adolescents. *Advances in School Mental Health Promotion, 2*(1), 35–46. https://doi.org/10.1080/1754730x.2009.9715696

Bryan, C. J., Bryan, A. O., Hinkson, K., Jr., Bichrest, M., & Ahern, D. A. (2014). Depression, posttraumatic stress disorder, and grade point average among student servicemembers and veterans. *Journal of Rehabilitation Research & Development, 51*(7), 1035–1046. http://dx.doi.org/10.1682/JRRD.2014.01.0012

Bush, M. (2010). *Contemplative higher education in contemporary America*. Centre for Contemplative Mind in Society.

Campion, J., & Rocco, S. (2009). Minding the mind: The effects and potential of a school-based meditation program for mental health promotion. *Advances in School Mental Health Promotion*, *2*(1), 47–55. https://doi.org/10.1080/ 1754730x.2009.9715697

Center for Contemplative Mind in Society. (2009). *What are contemplative practices?* http://www.contemplativemind.org/practices/

Chadwick, J., & Gelbar, N. W. (2016). Mindfulness for children in public schools: Current research and developmental issues to consider. *International Journal of School & Educational Psychology*, *4*(2), 106–112. https://doi.org/10.1080/21683603.2015.1130583

Chano, J. (2012). An education in awareness: Recovering the heart of learning through contemplation. *International Journal of Asian Social Science, 2*(2), 106–110. http://kpi.msu.ac.th/upload/ag_tor_ref_byval/ag_2_in_3.2.1_143(2555).pdf

Chen, J., & Yao, S. (2006). *Globalization, competition and growth in China*. Routledge.

China Youth Social Service Center. (2008). *2007 China National Juvenile Internet Use Survey report*. http://news.qq.com/a/20081020/001953.htm

Cohen, J. W. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). Lawrence Erlbaum Associates.

Crystal, D. S., Chen, C., Fuligni, A. J., Stevenson, H. W., Hsu, C. C., Ko, H. J., Kitamura, S., & Kimura, S. (1994). Psychological maladjustment and academic achievement: A cross-cultural study of Japanese, Chinese, and American high school students. *Child Development, 65*(3), 738–753. https://doi.org/10.2307/1131415

DeVellis, R. F. (2012). *Scale development: Theory and applications*. Sage Publications.

Esbjorn-Hargens, S., Reams, J., & Gunnlaugson, O. (Eds.). (2010). *Integral education: New directions for higher learning*. SUNY Press.

Felver, J. C., Celis-de Hoyos, C. E., Tezanos, K., & Singh, N. N. (2016). A systematic review of mindfulness-based interventions for youth in school settings. *Mindfulness*, *7*(1), 34–45. https://doi.org/10.1007/s12671-015-0389-4

Frazier, P., Gabriel, A., Merians, A., & Lust, K. (2019). Understanding stress as an impediment to academic performance. *Journal of American College Health, 67*(6), 562–570. https://doi.org/10.1080/07448481.2018.1499649

Greenberg, M. T., & Harris, A. R. (2012). Nurturing mindfulness in children and youth: Current state of the research. *Child Development Perspectives*, *6*(2), 161–166. https://doi.org/10.1111/j.1750-8606.2011.00215.x

Grossenbacher, P. G., & Parkin, S. S. (2006). Joining hearts and minds: A contemplative approach to holistic education in psychology. *Journal of College and Character*, *7*(6), 1–13. https://doi.org/10.2202/1940-1639.1203

Hanassab, S., & Tidwell, R. (2002). International students in higher education: Identification of needs and implications for policy and practice. *Journal of Studies in International Education*, *6*(4), 305–322. https://doi.org/10.1177/102831502237638

Hart, T. (2004). Opening the contemplative mind in the classroom. *Journal of Transformative Education*, *2*(1), 28–46. https://doi.org/10.1177/1541344603259311

Hart, T. (2008). Interiority and education: Exploring the neurophenomenology of contemplation and its potential role in learning. *Journal of Transformative Education*, *6*(4), 235-250. https://doi.org/10.1177/1541344608329393

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1*(1), 104–121. https://doi.org/10.1177/109442819800100106

Huan, V. S., See, Y. L., Ang, R. P., & Har, C. W. (2008). The impact of adolescent concerns on their academic stress. *Educational Review, 60*(2), 169–178. https://doi.org/10.1080/00131910801934045

Jennings, P. A. (2008). Contemplative education and youth development. *New Directions for Youth Development, 2008*(118), 101–105. https://doi.org/10.1002/yd.262

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science & Practice*, *10*(2), 144–156. https://doi.org/10.1093/clipsy/bpg016

Karaman, M. A., Lerma, E., Vela, J. C., & Watson, J. C. (2019). Predictors of academic stress among college students. *Journal of College Counseling, 22*(1), 41–55. https://doi.org/10.1002/jocc.12113

Koch, G. G. (1982). Intraclass correlation coefficient. In S. Kotz & N. L. Johnson (Eds.), *Encyclopedia of statistical sciences* (pp. 213–217). John Wiley.

Krikorian, M. (2016). *The development of the scale of contemplative practice in higher education* (chap.b8355172) [Doctoral dissertation, Chapman University]. Chapman University Catalog. http://creativecommons.org/licenses/by/4.0/

Krikorian, M., & Busse, R. T. (2019). Construction of a scale of contemplative practice in higher education: An exploratory study. *The Journal of Contemplative Inquiry, 6*(1), 225–251. https://journal.contemplativeinquiry.org/index.php/joci/article/view/160

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*(1), 159–174. https://doi.org/10.2307/2529310

Leavy, P. (2017). *Research design*: *Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches.* The Guilford Press.

Lee, J. J. (2015). Engaging international students. In S. J. Quaye, & S. R. Harper (Eds.), *Student engagement in higher education* (pp. 105–121). Routledge.

Lee, M., & Larson, R. (2000). The Korean "examination hell:" Long hours of studying, distress, and depression. *Journal of Youth and Adolescence*, *29*(2), 249–271. https://doi.org/10.1023/A:1005160717081

Li, H., & Zhang, Y. (2008). Factors predicting rural Chinese adolescents' anxieties, fears and depression. *School Psychology International, 29*(3), 376–384. https://doi.org/10.1177/0143034308093676

Lin, J., & Chen, Q. (1995). Academic pressure and impact on students' development in China. *McGill Journal of Education, 30*(2), 149–168. https://mje.mcgill.ca/article/view/8237/6165

Lin, X. J., Zhang, C. Y., Yang, S., Hsu, M. L., Cheng, H., Chen, J., & Yu, H. (2020). Stress and its association with academic performance among dental undergraduate students in Fujian, China: A cross-sectional online questionnaire survey. *BMC Medical Education. 20*(1), 1–9. https://doi.org/10.1186/s12909-020-02095-4

Liu, X., & Tein, J. Y. (2005). Life events, psychopathology, and suicidal behavior in Chinese adolescents. *Journal of Affective Disorders, 86*(2–3), 195–203. https://doi.org/10.1016/j.jad.2005.01.016

McMillan, J. H. (2016). *Fundamentals of educational research.* Pearson Education.

Mendelson, T., Greenberg, M. T., Dariotis, J. K., Gould, L. F., Rhoades, B. L., & Leaf, P. J. (2010). Feasibility and preliminary outcomes of a school-based mindfulness intervention for urban youth. *Journal of Abnormal Child Psychology*, *38*(7), 985–994. https://doi.org/10/1007/s10802-010-9419-x

Mezirow, J. (1991). *Transformative dimensions of adult learning*. Jossey-Bass.

Mishra, M. (2018). A comparative study on academic stress level of male and female B. Ed. students. *Indian Journal of Health and Well-being*, *9*(1), 131–135. http://www.i-scholar.in/index.php/ijhw/article/view/166603

Morgan, P. F. (2015). A brief history of the current reemergence of contemplative education. *Journal of Transformative Education*, *13*(3), 197–218. https://doi.org/10.1177/1541344614564875

Muijs, D. (2011). *Doing quantitative research in education with SPSS* (2nd ed.). Sage Publishing.

Myers, S. A., Philippi, C. L., Reyna, L., & Dahl, G. (2020). Relationship between self-leadership, psychological symptoms, and self-related thought in an undergraduate sample. *Psi Chi Journal of Psychological Research, 25*(2), 142—150. https://doi.org/10.24839/2325-7342.jn25.2.142

Napoli, M., Krech, P. R., & Holley, L. C. (2005). Mindfulness training for elementary students: The attention academy. *Journal of Applied School Psychology*, *21*(1), 99–125. https://doi.org/10.1300/J008v21n01_05

Nidich, S., Mjasiri, S., Nidich, R., Rainforth, M., Grant, J., Valosek, L., Change, W., & Zigler, R. (2011). Academic achievement and transcendental meditation: A study with at-risk urban middle school students. *Education, 131*(3), 556–564. https://eric.ed.gov/?id=EJ996375

O'Reilly, M. R. (1998). *Radical presence: Teaching as a contemplative practice.* Boynton/Cook.

Ozaki, C. C., & Johnston, M. (2008). The space in between: Issues for multiracial student organizations and advising. *New Directions for Student Services, 2008*(123), 53–61. https://doi.org/10.1002/ss.286

Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (6th ed.). Open University Press/McGraw-Hill Education.

Poceski, M. (2012). Chinese Buddhism. In R. Nadeau (Ed.), *The Wiley-Blackwell companion to Chinese religions* (pp. 197–218). Blackwell.

Renshaw, T. L., & Cook, C. R. (2017). Introduction to the special issue: Mindfulness in the schools—historical roots, current status, and future directions. *Psychology in the Schools, 54*(1), 5–12. https://doi.org/10.1002/pits.21978

Repetti, R. (2010). The case for a contemplative philosophy of education. *New Directions for Community Colleges, 2010*(151), 5–15. https://doi.org/10.1002/cc.411

Robinson, A. A., & Levac, L. (2018). Transformative learning in developing as an engaged global citizen. *Journal of Transformative Education*, *16*(2) 108–129. https://doi.org/10.1177/1541344617722634

Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). *Criteria for scale selection and evaluation in measure of personality and social psychological attitudes.* California Academic Press.

Roeser, R. W., & Peck, S. C. (2009). An education in awareness: Self, motivation, and self-regulated learning in contemplative perspective. *Educational Psychologist, 44*(2), 119–136. https://doi.org/10.1080/00461520902832376

Rosaen, C., & Benn, R. (2006).The experience of transcendental meditation in middle school students: A qualitative report. Explore: *The Journal of Science and Healing*, *2*(5), 422–425. https://doi.org/10.1016/j.explore.2006.06.001

Sathe, L. A., & Geisler, C. C. (2017). The reverberations of a graduate study abroad course in India: Transformational journeys. *Journal of Transformative Education, 15*(1) 16–36. https://doi.org/10.1177/1541344615604230

Schonert-Reichl, K. A., & Lawlor, M. S. (2010). The effects of a mindfulness-based education program on pre-and early adolescents' well-being and social and emotional competence. *Mindfulness*, *1*(3), 137–151. https://doi.org/10.1007/s12671-101-1100-8

Schwartz, R. C. (1995). *Internal Family Systems Therapy.* Guilford Press.

Schwartz, R. C. (2013). Moving from acceptance toward transformation with Internal Family Systems Therapy (IFS). *Journal of Clinical Psychology, 69*(8), 805–816. https://doi.org/10.1002/jclp.22016

Shor, R., Cattaneo, L., & Calton, J. (2017). Pathways of transformational service learning: Exploring the relationships between context, disorienting dilemmas, and student response. *Journal of Transformative Education*, *15*(2), 156–173. https://doi.org/10.1177/1541344616689044

Silverman, W. K., La Greca, A. M., & Wasserstein, S. (1995). What do children worry about? Worries and their relation to anxiety. *Child Development, 66*(3), 671-686. https://doi.org/10.2307/1131942

Singleton, M., & Byrne, J. (Eds.). (2008). *Yoga in the modern world: Contemporary perspectives.* Taylor & Francis.

Stock, B. (1998). *Augustine the reader: Meditation, self-knowledge, and the ethics of interpretation*. Harvard University Press.

Stock, B. (2006). The contemplative life and the teaching of the humanities. *Teachers College Record, 108*(9), 1760–1764. http://www.contemplativemind.org/files/stock.pdf

Sun, J., Dunne, M. P., Hou, X., & Xu, A. (2011). Educational stress scale for adolescents: Development, validity, and reliability with Chinese students. *Journal of Psychoeducational Assessment, 29*(6), 534–546. https://doi.org/10.1177/0734282910394976

Sweezy, M., & Ziskind, E. L. (2013). *Internal Family Systems Therapy—new dimensions.* Routledge.

Tang, N. Y. Y., & Westwood, P. (2007). Worry, general self-efficacy and school achievement: An exploratory study with Chinese adolescents. *Australian Journal of Guidance and Counseling, 17*(1), 68–80. https://doi.org/10.1375/ajgc.17.1.68

Terrell, S. R. (2016). *Writing a proposal for your dissertation: Guidelines and examples.* The Guilford Press.

Tharp, D. S. (2017). Exploring first-year college students' cultural competence. *Journal of Transformative Education*, *15*(3), 241–263. https://doi.org/10.1177/1541344616686552

Thomas, J. T. (2017). Brief mindfulness training in the social work practice classroom. *Social Work Education*, *36*(1), 102–118. https://doi.org/10.1080/02615479.2016.1250878

Travis, J., Kaszycki, A., Geden, M., & Bunde, J. (2020). Some stress is good stress: The challenge-hindrance framework, academic self-efficacy, and academic outcomes. *Journal of Educational Psychology*, *112*(8), 1632–1643. http://dx.doi.org/10.1037/edu0000478

Troop, M. (2017). Creativity as a driver for transformative learning: Portraits of teaching and learning in a contemporary curriculum course. *Journal of Transformative Education*, *15*(3), 203–222. https://doi.org/10.1177/1541344617692772

Urdan, T. C. (2010). *Statistics in plain English* (3rd ed.). Routledge.

Wall, R. B. (2005). Tai chi and mindfulness-based stress reduction in a Boston public middle school. *Journal of Pediatric Health Care*, *19*(4), 230–237. https://doi.org/10.1016/jpedhc.2005.02.006

Walters, C., Charles, J., & Bingham, S. (2017). Impact of short-term study abroad experiences on transformative learning: A comparison of programs at 6 weeks. *Journal of Transformative Education*, *15*(2), 103–121. https://doi.org/10.1177/1541344616670034

Waters, L., Barsky, A., Ridd, A., & Allen, K. (2015). Contemplative education: A systematic, evidence-based review of the effect of meditation interventions in schools. *Educational Psychology Review*, *27*(1), 103–134. https://doi.org/10.1007/s10648-014-9258-2

Wilton, L., & Constantine, M. G. (2003). Length of residence, cultural adjustment difficulties, and psychological distress symptoms in Asian and Latin American international students. *Journal of College Counseling*, *6*(2), 177–186. https://doi.org/10.1002/j.2161-1882.2003.tb00238.x

Woodrow, K., & Caruana, V. (2017). Preservice teachers' perspective transformations as social change agents. *Journal of Transformative Education*, *15*(1), 37–58. https://doi.org/10.1177/1541344616655887

Zajonc, A. (2006). Love and knowledge: Recovering the heart of learning through contemplation. *The Teachers College Record*, *108*(9), 1742–1759. http://www.arthurzajonc.org/wp-content/uploads/2016/01/Love-and-Knowledge-Recovering-the-Heart-of-Learning-Through-Contemplation.pdf

Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools: A systematic review and meta-analysis. *Frontiers in Psychology*, *5*, 603–620. https://doi.org/10.3389/fpsyg.2014.00603

APPENDICES

Appendix A

Table A1

Descriptive Statistics of SCOPE and Pressure from Study

Variables	Mean	Std. deviation	*N*
Total SCOPE scores	101.25	14.920	144
Scores of pressure from study	11.17	2.814	144

Table A2

Correlations Between Scores of SCOPE and Pressure from Study

Variables	Method & sig.	Total SCOPE scores	Pressure from study
Total SCOPE scores	Pearson correlation	1	.317**
	Sig. (two-tailed)		.000
	N	144	144
Pressure from study	Pearson correlation	.317**	1
	Sig. (two-tailed)	.000	
	N	144	144

Note: ** Represents that correlation is significant at the 0.01 level (two-tailed).

Table A3

Descriptive Statistics of SCOPE and Workload

Variables	Mean	Std. deviation	*N*
Total SCOPE scores	101.25	14.920	144
Workload	851	2.209	144

Table A4

Correlations Between Scores of SCOPE and Workload

Variables	Method & Sig.	Total SCOPE scores	Workload
Total SCOPE scores	Pearson correlation	-	.282**
	Sig. (two-tailed)		.001
	N	144	144
Workload	Pearson correlation	.282**	-
	Sig. (two-tailed)	.001	
	N	144	144

Note. ** represents correlation significant at the 0.01 level (two-tailed).

Table A5

Descriptive Statistics of SCOPE and Worry About Grades

Variables	Mean	Std. deviation	*N*
Total SCOPE scores	101.25	14.920	144
Worry about grades	8.26	2.394	144

Table A6

Correlations Between Scores of SCOPE and Worry About Grades

Variables	Method & sig.	Total SCOPE scores	Worry about grades
Total SCOPE scores	Pearson correlation	-	.135
	Sig. (two-tailed)		**.107**
	N	144	144
Worry about grades	Pearson correlation	.135	-
	Sig. (two-tailed)	**.107**	
	N	144	144

Table A7

Descriptive Statistics of SCOPE and Self-Expectation Stress

Variables	Mean	Std. deviation	*N*
Total SCOPE scores	101.25	14.920	144
Self-expectation stress	7.38	2.320	144

Table A8

Correlations Between Scores of SCOPE and Self-Expectation Stress

Variables	Method & sig.	Total SCOPE scores	Self-expectation stress
Total SCOPE scores	Pearson correlation	1	.047
	Sig. (two-tailed)		.579
	N	144	144
Self-expectation stress	Pearson correlation	.047	1
	Sig. (two-tailed)	.579	
	N	144	144

Table A9

Descriptive Statistics of SCOPE and Study Despondency

Variables	Mean	Std. deviation	*N*
Total SCOPE scores	101.25	14.920	144
Study despondency	8.35	2.413	144

Table A10

Correlations Between Scores of SCOPE and Study Despondency

Variables	Method & sig.	Total SCOPE scores	Study despondency
Total SCOPE scores	Pearson correlation	-	.232**
	Sig. (two-tailed)		.005
	N	144	144
Study despondency	Pearson correlation	.232**	-
	Sig. (two-tailed)	.005	
	N	144	144

Note. ** represents that correlation is significant at the 0.01 level (two-tailed).

Table A11

Descriptive Statistics of GPA and Pressure from Study

Variables	Mean	Std. deviation	*N*
GPA	2.88	.639	113
Pressure from study	11.03	3.013	113

Table A12

Correlations Between GPA and Pressure From Study

Variables	Method & sig.	GPA	Pressure from study
GPA	Pearson correlation	1	.173
	Sig. (two-tailed)		.067
	N	113	113
Pressure from study	Pearson correlation	.173	1
	Sig. (two-tailed)	.067	
	N	113	113

Table A13

Correlations Between GPA and Workload

Variables	Method & sig.	GPA	Workload
GPA	Pearson correlation	1	.139
	Sig. (two-tailed)		.141
	N	113	113
Workload	Pearson correlation	.139	1
	Sig. (two-tailed)	.141	
	N	113	113

Table A14

Correlations Between GPA and Worry About Grades

Variables	Method & sig.	GPA	Worry about grades
GPA	Pearson correlation	1	.063
	Sig. (two-tailed)		.507
	N	113	113
Worry about grades	Pearson correlation	.063	1
	Sig. (two-tailed)	.507	
	N	113	113

Table A15

Correlations Between GPA and Self-Expectation Stress

Variables	Method & sig.	GPA	Self-expectation stress
GPA	Pearson correlation	1	.092
	Sig. (two-tailed)		.331
	N	113	113
Self-expectation stress	Pearson correlation	.092	1
	Sig. (two-tailed)	.331	
	N	113	113

Table A16

Correlations Between GPA and Study Despondency

Variables	Method & sig.	GPA	Study despondency
GPA	Pearson correlation	1	.237*
	Sig. (two-tailed)		.011
	N	113	113
Study despondency	Pearson correlation	.237*	1
	Sig. (two-tailed)	.011	
	N	113	113

Note. * represents that correlation is significant at the 0.05 level (two-tailed).

Table A17

Descriptive Statistics of Both Genders on Scores of Pressure from Study

Subscale	Sex	*N*	Mean	Std. deviation	Std. error mean
Pressure from study	1 male	41	11.66	3.561	.556
	2 female	101	10.98	2.462	.245

Note. Pressure from study is the subscale 1 of ESSA.

Table A18

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Pressure from study	Equal variances assumed	5.065	.026	1.299	140	.196	.678	.522	-.354	1.711
	Equal variances not assumed			1.116	56.179	.269	.678	.608	-.539	1.896

Table A19

Descriptive Statistics of Both Genders on Workload Scores

	Sex	*N*	Mean	Std. deviation	Std. error mean
Workload	1 male	41	8.56	2.702	.422
	2 female	101	8.49	1.968	.196

Note. Workload is the subscale 2 of ESSA

Table A20

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Workload	Equal variances assumed	4.087	.045	.186	140	.853	.076	.408	-.731	.882
	Equal variances not assumed			.163	57.999	.871	.076	.465	-.855	1.007

Table A21

Descriptive Statistics of Both Genders on Scores of Worry About Grades

Variable	Sex	*N*	Mean	Std. deviation	Std. error mean
Worry about grades	1 male	41	8.29	2.874	.449
	2 female	101	8.22	2.194	.218

Note. Worry about grades is the subscale 3 of ESSA.

Table A22

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
						Sig. (two-tailed)	Mean difference	Std. error difference	95% CI	
		F	Sig.	*t*	*df*				Lower	Upper
Worry about grades	Equal variances assumed	2.151	.145	.168	140	.867	.075	.446	-.807	.956
	Equal variances not assumed			.150	59.813	.881	.075	.499	-.924	1.073

Table A23

Descriptive Statistics of Both Genders on Self-Expectation Stress

Variable	Sex	*N*	Mean	Std. deviation	Std. error mean
Self-expectation stress	1 male	41	7.54	2.637	.412
	2 female	101	7.30	2.207	.220

Note. Self-expectation stress is the subscale 4 of ESSA.

Table A24

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Self-expectation stress	Equal variances assumed	1.330	.251	.553	140	.581	.240	.433	-.616	1.096
	Equal variances not assumed			.513	63.911	.610	.240	.467	-.693	1.172

Table A25

Descriptive Statistics of Both Genders on Study Despondency Scores

Variable	Sex	*N*	Mean	Std. deviation	Std. error mean
Study despondency	1 male	41	8.80	2.722	.425
	2 female	101	8.12	2.237	.223

Note. Study despondency is the subscale 5 of ESSA.

Table A26

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Study despondency	Equal variances assumed	1.282	.259	1.553	140	.123	.686	.442	-.187	1.560
	Equal variances not assumed			1.430	63.047	.158	.686	.480	-.273	1.645

Table A27

Descriptive Statistics of Both Study Emphases on Scores of Pressure from Study

Variable	Emphasis	*N*	Mean	Std. deviation	Std. error mean
Pressure from study	1 education	77	11.16	2.715	.309
	2 business	67	11.18	2.944	.360

Note. Pressure from study is the subscale 1 of ESSA.

Table A28

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Pressure from study	Equal variances assumed	.070	.792	-.049	142	.961	-.023	.472	-.956	.909
	Equal variances not assumed			-.049	135.428	.961	-.023	.474	-.961	.915

Table A29

Descriptive Statistics of Both Emphases on Workload Scores

Variable	Emphasis	*N*	Mean	Std. deviation	Std. error mean
Workload	1education	77	8.47	2.100	.239
	2 business	67	8.57	2.343	.286

Note. Workload is the subscale 2 of ESSA.

Table A30

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Workload	Equal variances assumed	.090	.764	-.269	142	.788	-.100	.370	-.832	.632
	Equal variances not assumed			-.267	133.750	.790	-.100	.373	-.838	.638

Table A31

Descriptive Statistics of Both Emphases on Scores of Worry About Grades

Variable	Emphasis	*N*	Mean	Std. deviation	Std. error mean
Worry about grades	1 education	77	8.16	2.434	.277
	2 business	67	8.37	2.360	.288

Note. Worry about grades is the subscale 3 of ESSA.

Table A32

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	95% CI Lower	95% CI Upper
Worry about grades	Equal variances assumed	.022	.882	-.542	142	.589	-.217	.401	-1.010	.575
	Equal variances not assumed			-.543	140.315	.588	-.217	.400	-1.008	.574

Table A33

Descriptive Statistics of Both Emphases on Self-Expectation Stress Scores

Variable	Emphasis	*N*	Mean	Std. deviation	Std. error mean
Self-expectation stress	1 education	77	7.26	2.457	.280
	2 business	67	7.51	2.163	.264

Note. Self-expectation stress is the subscale 4 of ESSA.

Table A34

Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Self-expectation stress	Equal variances assumed	.792	.375	-.638	142	.525	-.248	.388	-1.016	.520
	Equal variances not assumed			-.643	141.978	.521	-.248	.385	-1.009	.513

Table A35

Descriptive Statistics of Both Study Emphases on Despondency Scores

Variable	Emphasis	*N*	Mean	Std. deviation	Std. error mean
Study despondency	1 education	77	8.22	2.210	.252
	2 business	67	8.51	2.636	.322

Note. Study despondency is the subscale 5 of ESSA.

Table A36

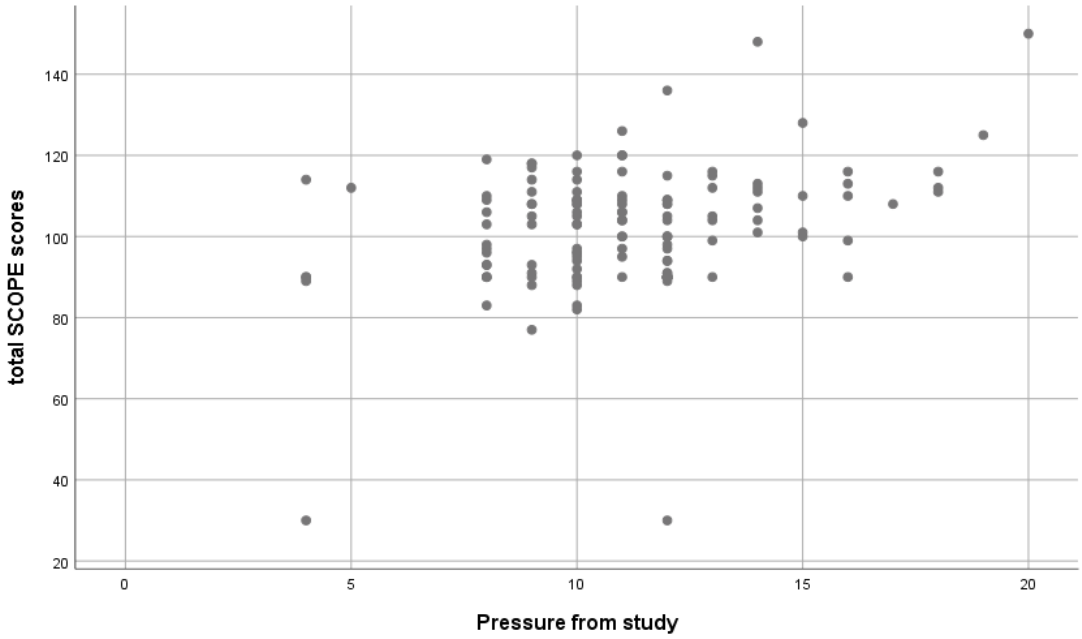
Independent Samples Test

		Levene's test for equality of variances		*t* test for equality of means						
									95% CI	
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	Std. error difference	Lower	Upper
Study despon-dency	Equal variances assumed	1.068	.303	-.710	142	.479	-.287	.404	-1.085	.512
	Equal variances not assumed			-.701	129.384	.484	-.287	.409	-1.096	.522

Appendix B

Figure B1

Correlation Between Scores of SCOPE and Scores of Pressure from Study



Note. Pressure from study is the subscale 1 of ESSA.

Figure B2

Simple Histogram of Pressure From Study

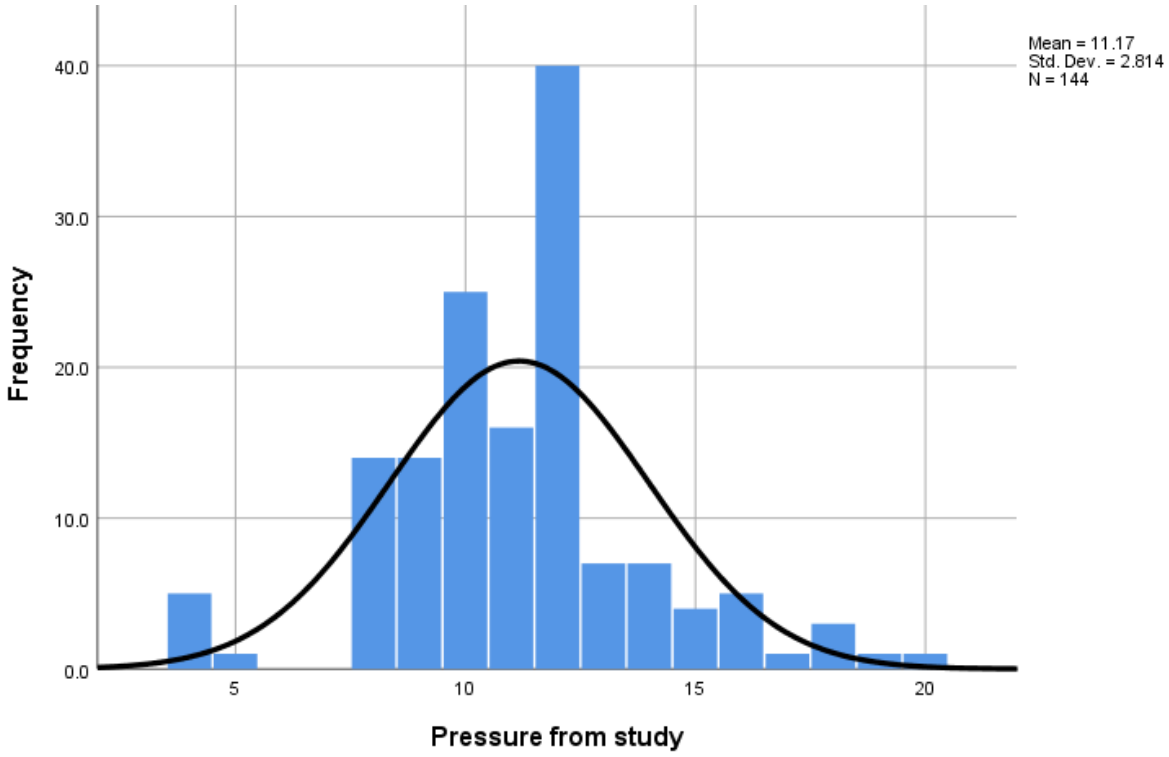
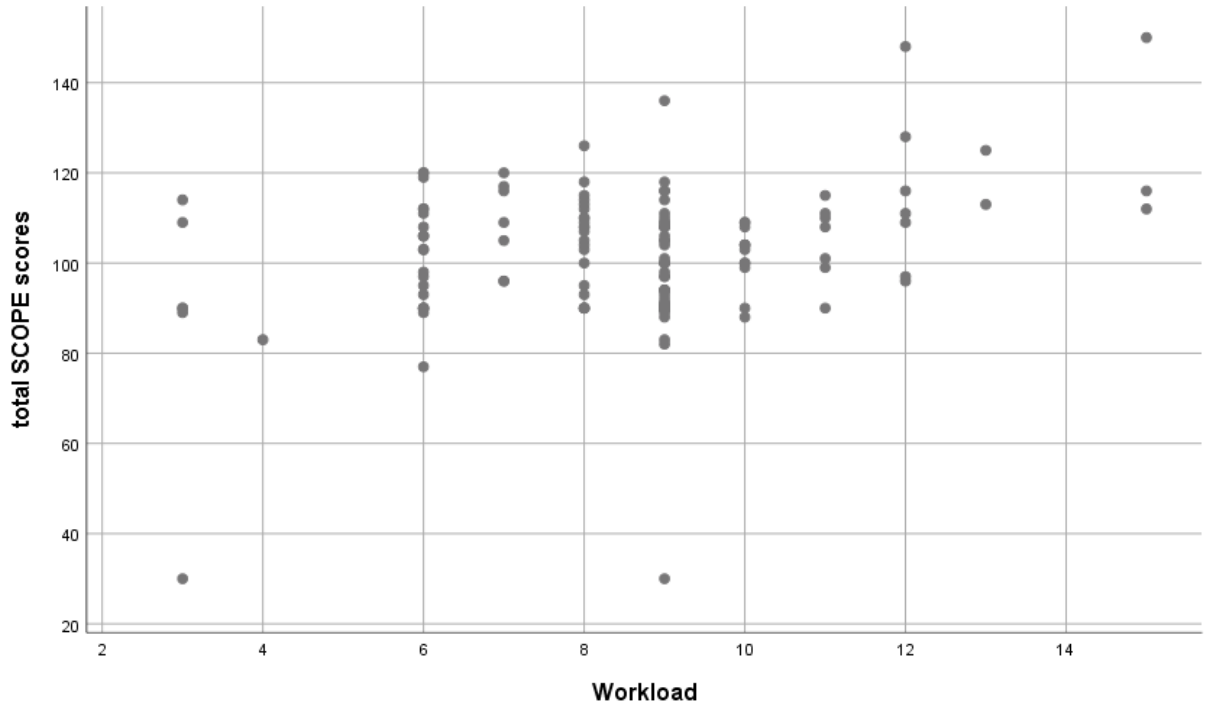


Figure B3

Correlation Between Scores of SCOPE and Scores of Workload



Note. Workload is the subscale 2 of ESSA.

Figure B4

Simple Histogram of Workload

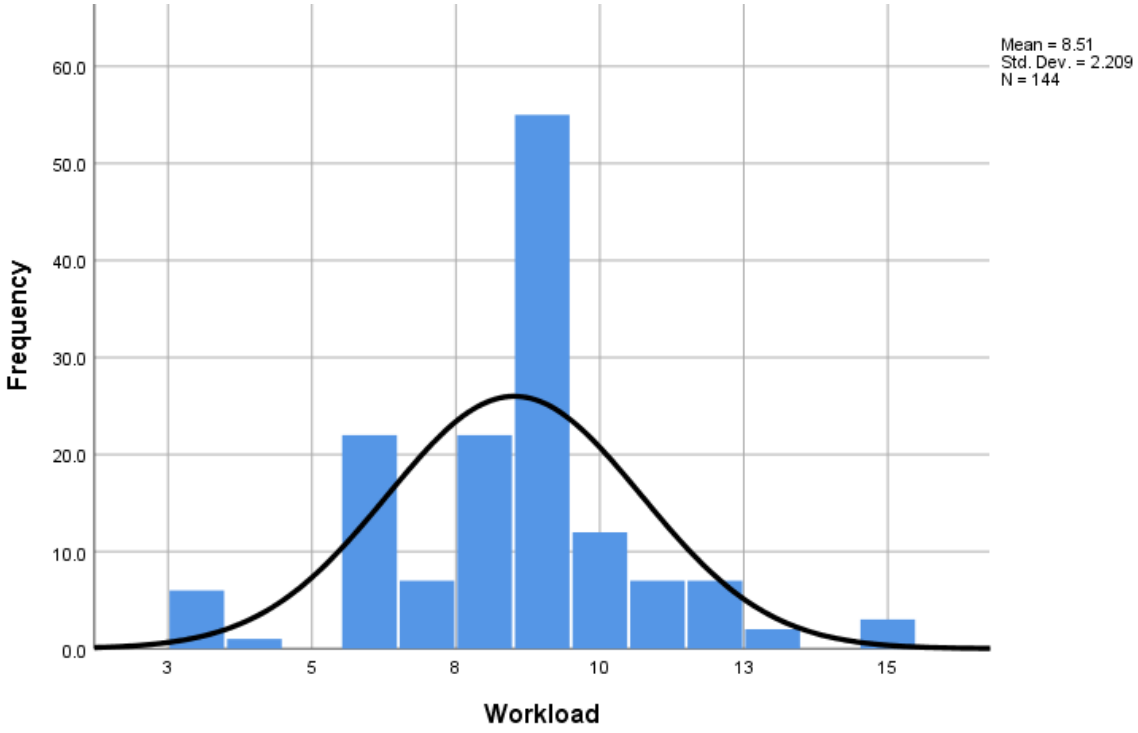
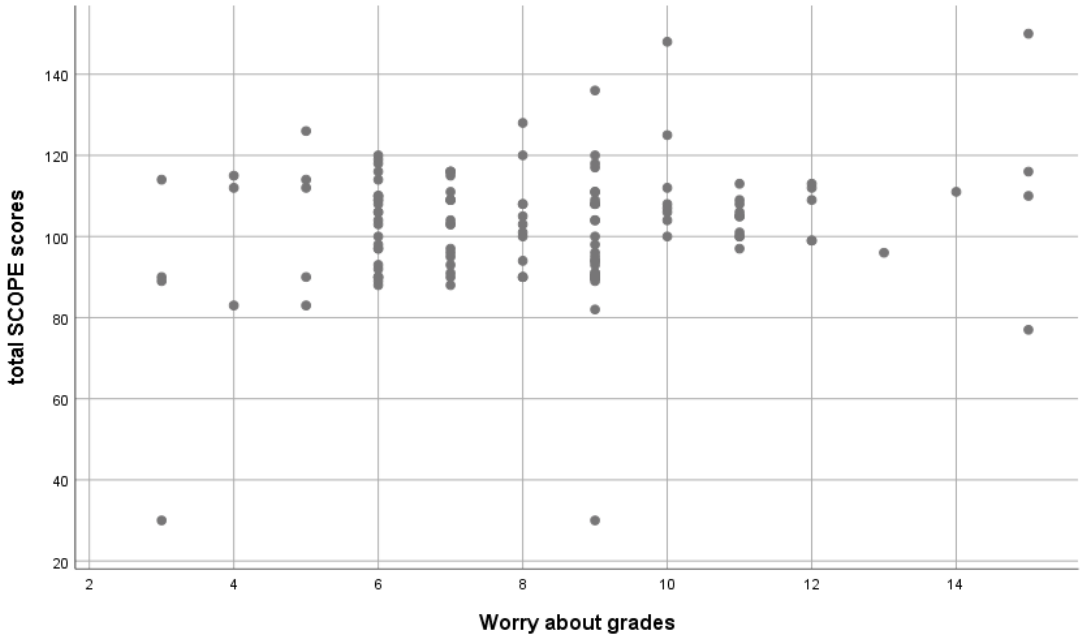


Figure B5

Scatterplot Showing Correlation Between Scores of SCOPE and Scores of Worry About Grades



Note. Worry about grades is the subscale 3 of ESSA

Figure B6

Simple Histogram of Worry About Grades

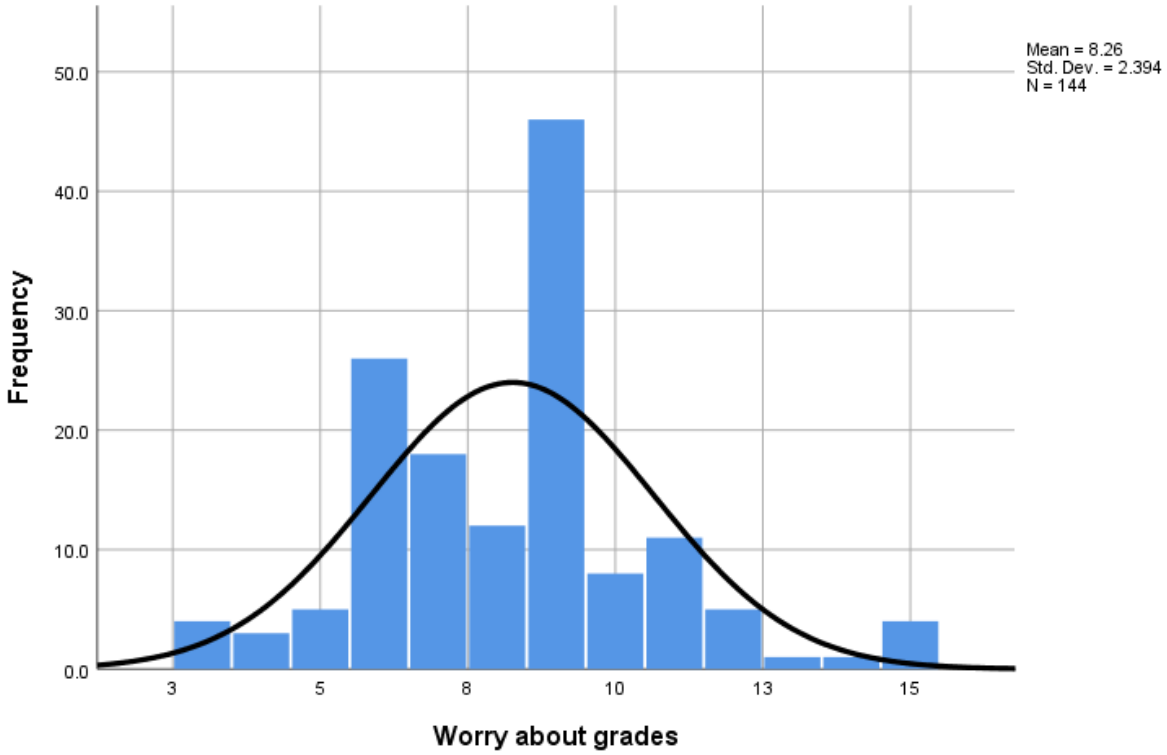
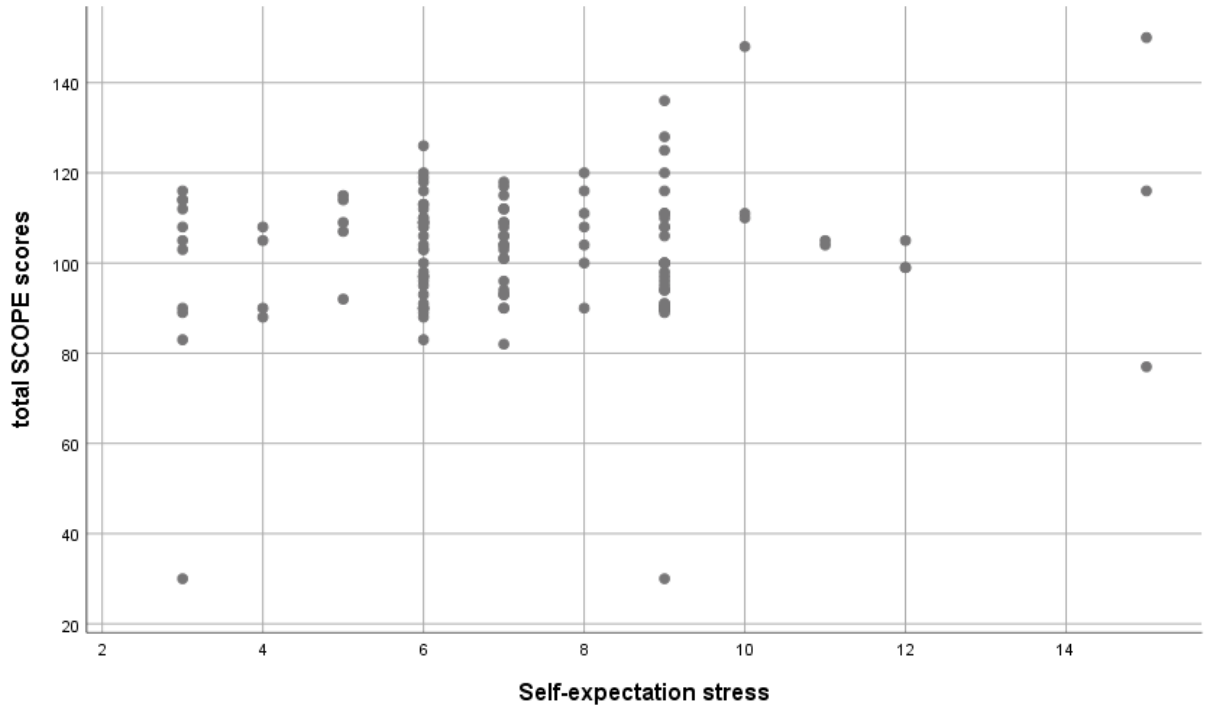


Figure B7

Scatterplot Showing Correlation Between Scores of SCOPE and Self-Expectation Stress



Note. Self-expectation stress is the subscale 4 of ESSA.

Figure B8

Simple Histogram of Self-Expectation Stress

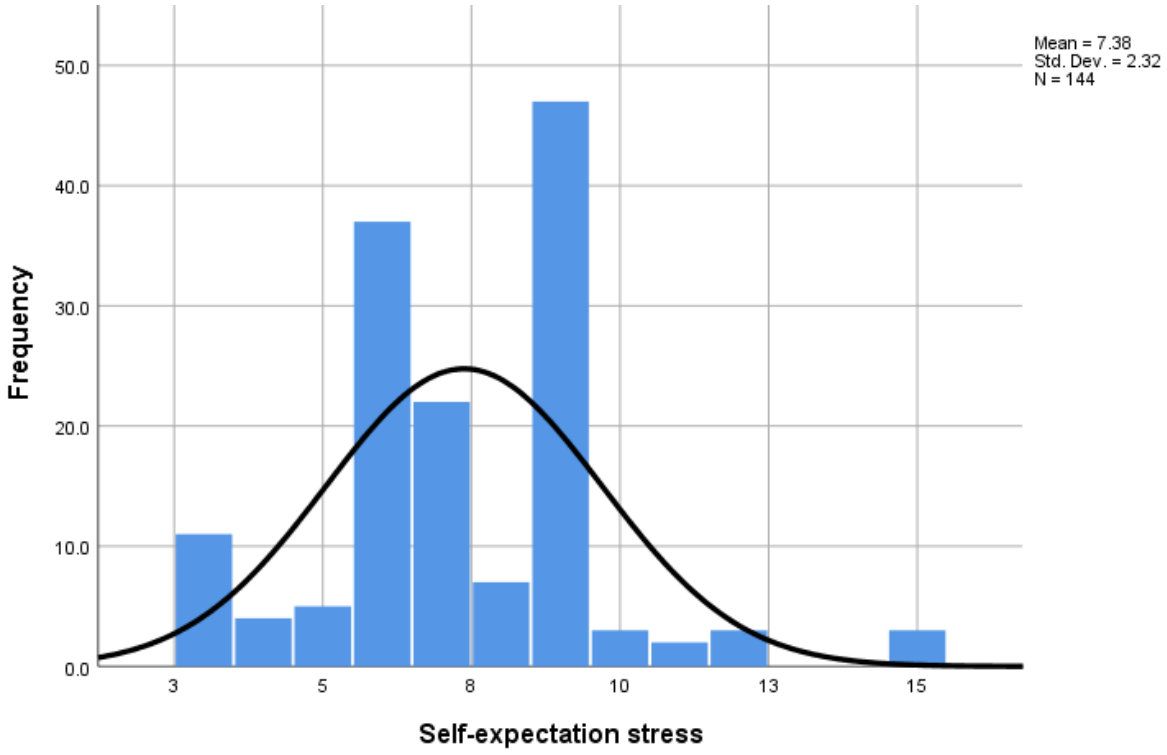
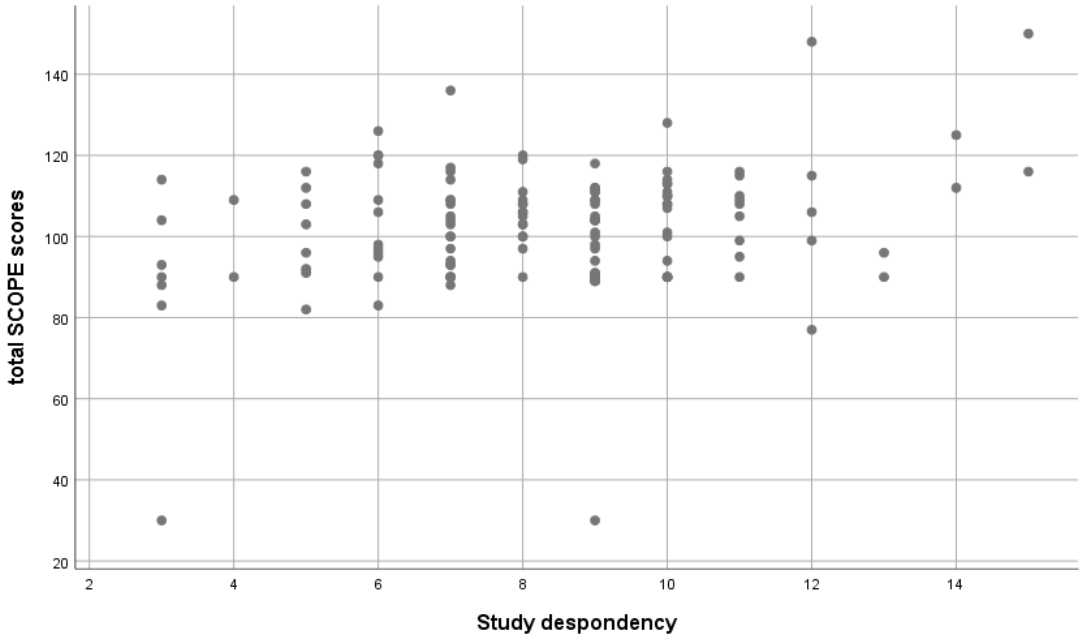


Figure B9

Scatterplot Showing Correlation Between Scores of SCOPE and Study Despondency



Note. Study despondency is the subscale 5 of ESSA.

Figure B10

Simple Histogram of Study Despondency

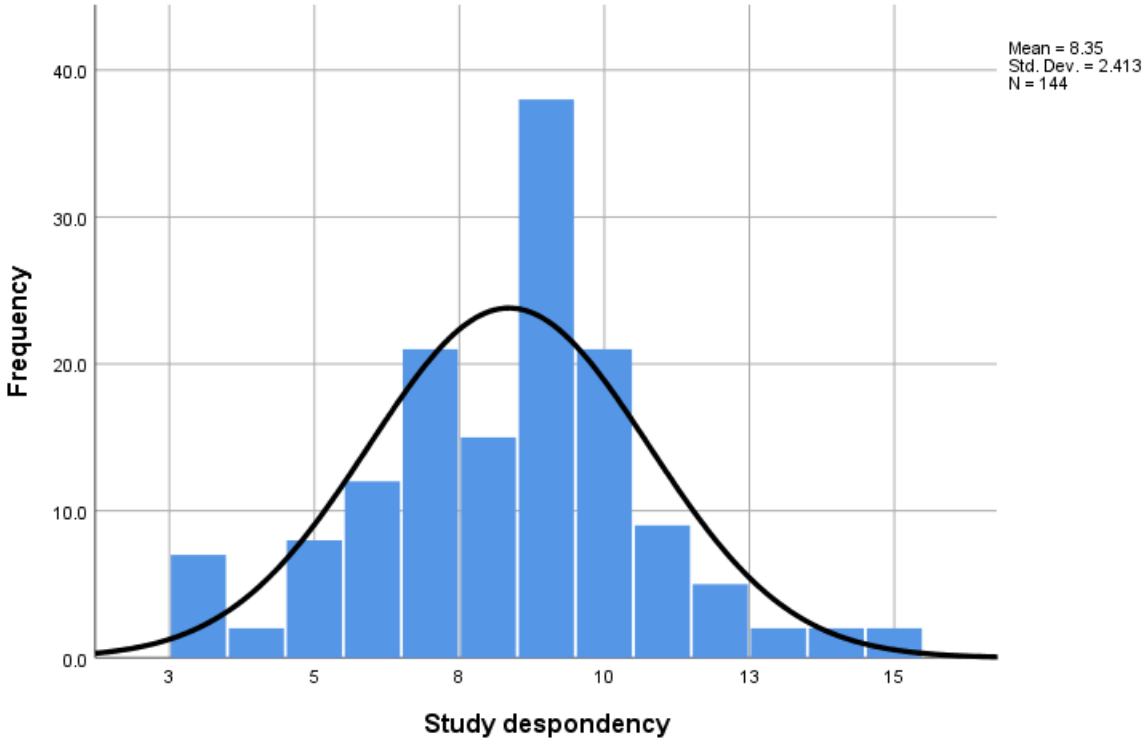
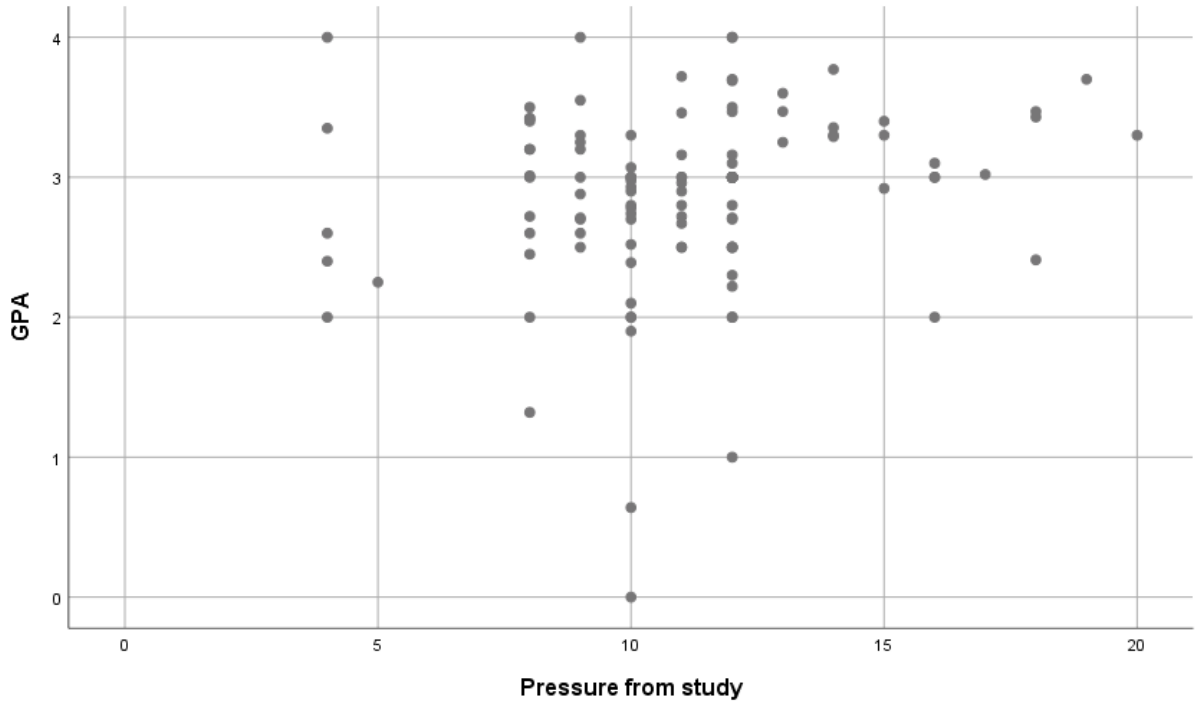


Figure B11

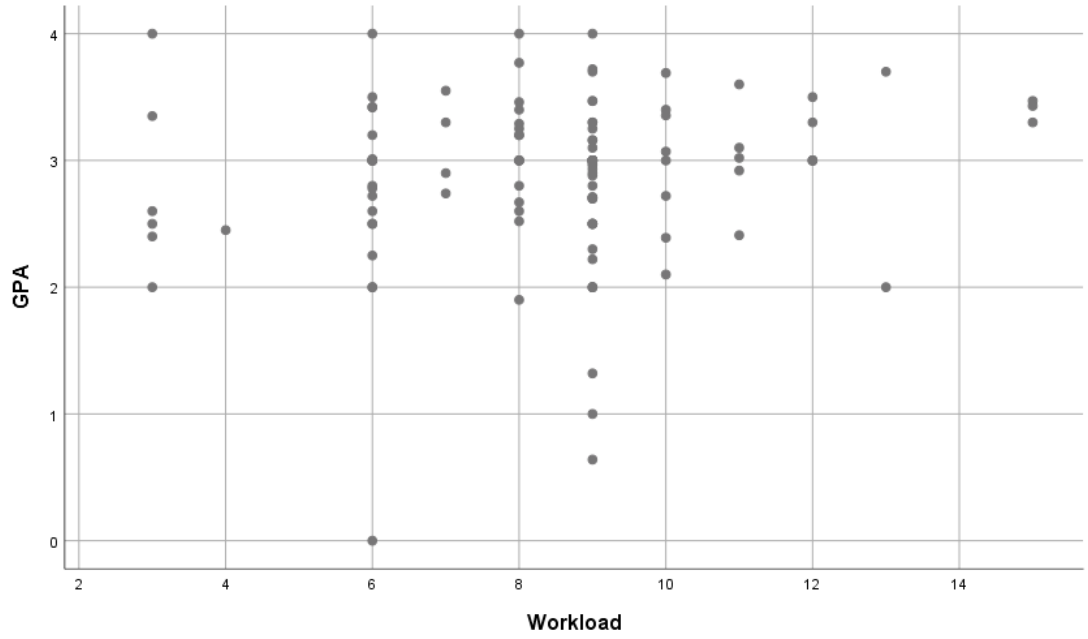
Scatterplot Showing Correlation Between Scores of GPA and Pressure From Study



Note. Pressure from study is the subscale 1 of ESSA

Figure B12

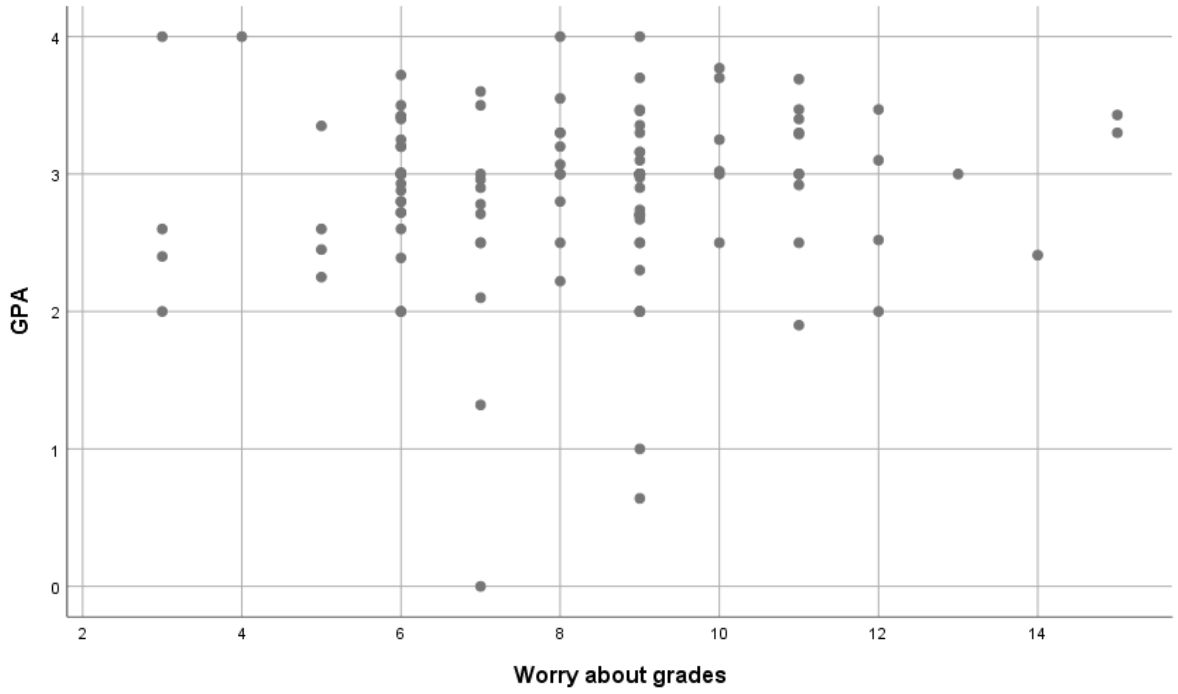
Scatterplot Showing Correlation Between Scores of GPA and Workload



Note. Workload is the subscale 2 of ESSA

Figure B13

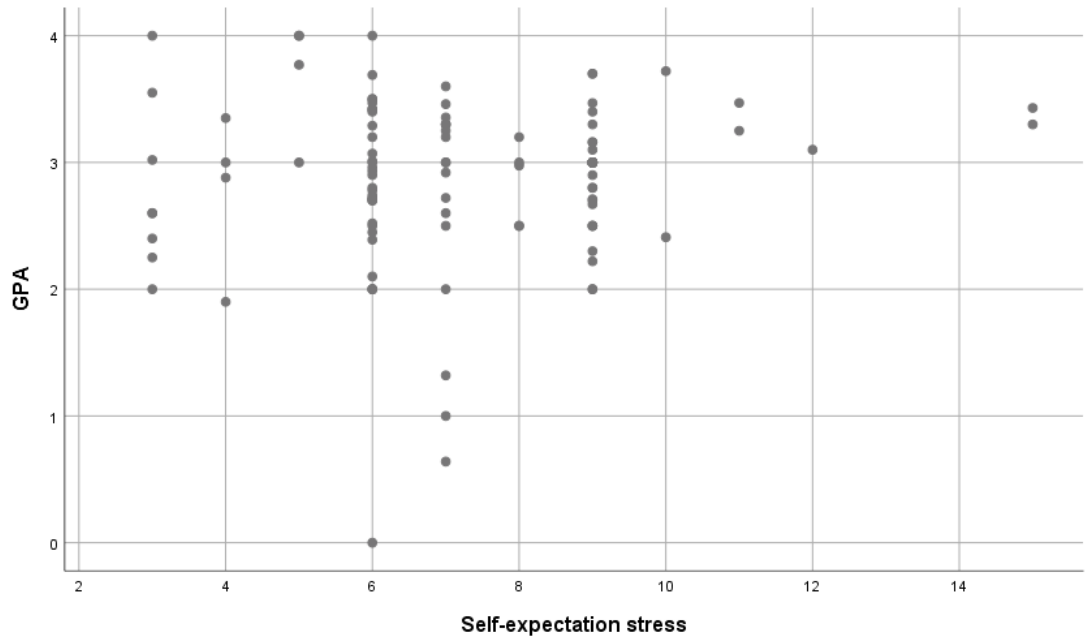
Scatterplot Showing Correlation Between Scores of GPA and Worry About Grades



Note. Worry about grades is the subscale 3 of ESSA

Figure B14

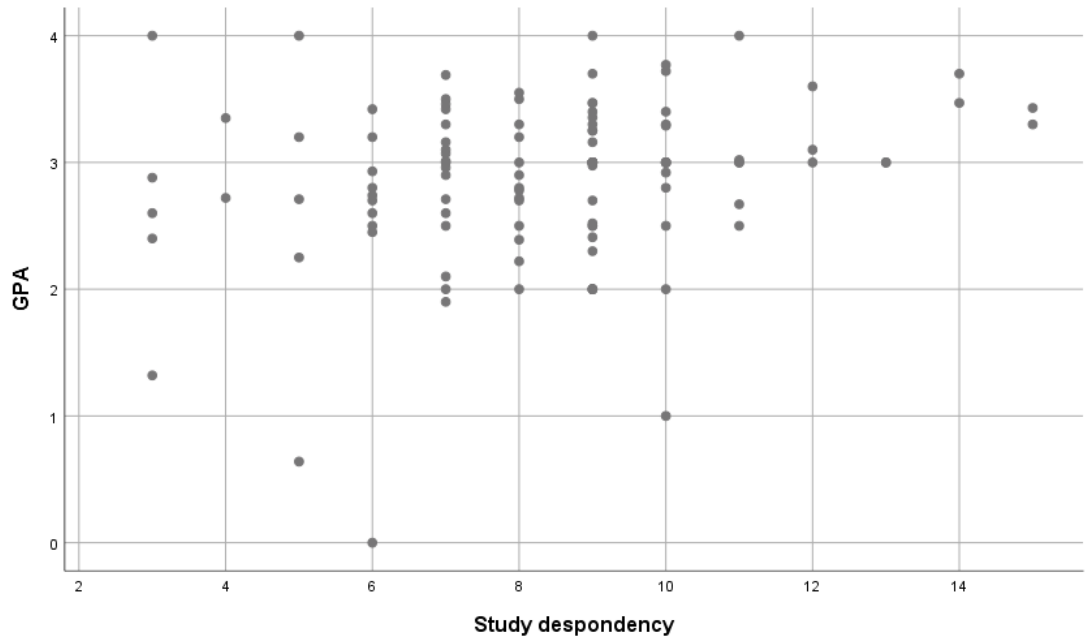
Scatterplot Showing Correlation Between Scores of GPA and Self-Expectation Stress



Note. Self-expectation stress is the subscale 4 of ESSA

Figure B15

Scatterplot Showing Correlation Between Scores of GPA and Study Despondency



Note. Study despondency is the subscale 5 of ESSA

Appendix C

Adult Informed Consent to Participate in Research

Title of Study: Chinese Undergraduates' Perceptions of Their Academic Environment

Members of the Research Team

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Key Information

You are being asked to take part in an anonymous online research study. Research studies include only people who choose to take part. If you have questions, the student researcher will explain the study to you and will answer any questions you might have. You should take your time in deciding whether or not you want to participate.

If you agree to participate in this study, the project will involve:

- College students between the ages of 18-24
- Procedures include administration of an anonymous online survey [no identifying information about you will be collected]
- Completion of the anonymous survey will take approximately 15-30 minutes
- There are no risks associated with this study that exceed what would typically be encountered in daily life

Invitation

You are invited to take part in this research study. The information in this form is meant to help you decide whether or not to participate. If you have any questions, please ask.

Why are you being asked to be in this research study?

You are being asked to be in this study because you are a college student at a private university in the Shanghai area. You must be 18 years of age or older to participate.

What is the reason for doing this research study?

The main reason for this research study is to better understand Chinese undergraduates' perspectives regarding their academic environment.

What will be done during this research study?

You will be asked to complete a survey using an anonymous internet-based questionnaire. The survey will take approximately 15-30 minutes to complete and you may complete it on your computer.

What are the possible risks of being in this research study?

There are no known risks to you for being in this research study. However, some of the questions in the survey inquire about your educational environment and may cause you discomfort or stress. You may discontinue the survey at any time.

What are the possible benefits to you?

You are not expected to get any direct benefit from being in this study.

What are the possible benefits to other people?

The benefit to others is that the results of the study may help us better understand students' perceptions and academic challenges.

What will participating in this research study cost you?

There is no cost to you to be in this research study.

Will you be compensated for being in this research study?

You will not be compensated for your participation in this research study.

What should you do if you have a problem during this research study?

Your welfare is the major concern of every member of the research team. If you have a problem as a direct result of being in this study, you should immediately contact one of the people listed at the beginning of this consent form.

How will information about you be protected?

Your responses to the online survey are anonymous. Reasonable steps will be taken to protect your privacy and the confidentiality of your study data.

The data will be stored electronically through a secure server and will only be seen by the research team during the study.

The only people who will have access to your research records are the members of the research team, the Institutional Review Board (IRB) of Chapman University, and any other person, agency, or sponsor as required by law. Information from this study may be published in scientific journals or presented at scientific meetings but the data will be reported as group or summarized data and your identity will be kept strictly confidential.

What are your rights as a research subject?

You may ask any questions about this research and have those questions answered before agreeing to participate in the study or during the study. For study related questions, please contact the investigator(s) listed at the beginning of this form. For questions concerning your rights or complaints about the research, contact the Institutional Review Board (IRB) at (714) 628-2833 or irb@chapman.edu.

What will happen if you decide not to be in this research study or decide to stop participating once you start?

You can decide not to be in this research study, or you can stop being in this research study (i.e., "withdraw") at any time before, during, or after the research begins for any reason. Deciding not to be in this research study or deciding to withdraw will not affect your relationship with the investigator, or with Chapman University or Jianqiao University in Shanghai. You will not lose any benefits to which you are entitled.

Documentation of informed consent

You are voluntarily deciding whether or not to be in this research study. By continuing with the online survey you are stating that (1) you have read and understood this consent form, (2) you have had the consent form explained to you if needed, (3) you have had your questions answered if needed, and (4) you have decided to be in the research study.

Appendix D

Chinese Version Of Adult Informed Consent To Participate In Research

您被邀请参加这项研究是因为您是上海地区一所私立大学的大学生。您必须年满 18 周岁方可参加本次研究。

为什么要做这个研究？

本研究的主要目的是为了更好地了解中国大学生对学术环境的看法。

研究中要完成的任务

请您通过匿名的网上问卷完成一项调查。大约需要 15-30 分钟，您可以在电脑上完成。

研究中的风险

在本研究中没有已知的风险。然而，调查中的一些问题询问了你的教育环境，可能会给你带来不适或压力，你可以在任何时候停止参加该调查。

对您可能带来的好处

您不会从本研究中得到任何直接的好处。

对其他人可能带来的好处

对其他人的好处是研究结果可以帮助我们更好地了解学生的看法和学业的挑战

您参加本次研究的费用

参加本次研究无需任何费用

参加本次研究的补偿

您将不会因参与本次研究而获得补偿。

在参加本次研究的过程中，如果遇到问题，您将怎么做？

您的安危是研究小组的每个成员最关心的问题。若您由于参加了此次研究而产生了问题，请立刻与知青同意书开头所列出的研究人员联系。

您的信息如何得到保护？

您对于在线调查的回答是匿名的。我们将采取合理的措施保护您的隐私和您的研究数据的机密性。

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如当时需要，研究人员已向您解释了该同意书的内容。

如当时需要，研究人员已回答了您的相关问题。

您已决定参与本次研究。

Appendix E

The Scale of Contemplative practice in Higher Education

Scale Number	Scale Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I intentionally take care of my physical, mental, and emotional health when I am struggling in a course					
2	While listening to course lectures I do not engage in off task activities					
3	I recognize how my statements may affect someone's feelings during class discussions					
4	In class when I ask a clarifying question, I believe my peers may have the same question					
5	I focus on learning course content rather than my grade					
Scale Number	**Scale Item**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
6	I am open to viewpoints that are opposite to my own					
7	I am confident about my academic future even when I earn grades lower than my expectation					
8	Each semester I make my class assignments my academic priority					
9	I welcome constructive feedback when I am collaborating with my peers					
10	I am accepting of my mistakes					
Scale Number	**Scale Item**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
11	After the course concludes, I find it easy to remember what I have learned					
12	I am able to support my peers when they need help on challenging assignments					
13	I am patient with myself when I do not understand something the first-time new information is presented					
14	I approach course lectures with curiosity and openness					
15	I demonstrate support for my peers when they are conducting class presentations					

Scale Number	Scale Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16	I remind myself that others may also be experiencing the same feelings when I am struggling with course material					
17	When faced with challenging course material I try to keep my emotions in balance					
18	I am aware of my biases when participating in course discussions					
19	I am hopeful about my course grade even when I do not perform as well as my peers on a course assignment					
20	I am able to be present in my current academic term without worrying about future academic experiences					
Scale Number	**Scale Item**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
21	In class I pay attention to my instructors non-verbal behaviors					
22	I have focused on positive past academic experiences during my academic journey					
23	I am able to focus on my current coursework without concentrating too much on graduation					
24	When I am listening to my peers, I ask questions to better understand their point of view					
25	I care about how my education will contribute to the common good					
Scale Number	**Scale Item**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
26	I am able to block out distractions while reading assigned course material					
27	In class I am able to focus even when the course content does not interest me					
28	I am patient with myself when I am trying to learn a difficult subject					
29	I am able to focus on one academic task at a time					
30	If called upon in class, I am able to repeat the last words of my instructor’s lecture					

Appendix F

The Chinese Version of the Scale of Contemplative Practice in Higher Education

序号	量表项目	非常不同意	不同意	中立	同意	非常同意
1	当我在课程中感到挣扎时，我会有意地关注自己的身体，心理和情感健康。					
2	在听课程讲座时，我不会参与课程之外的活动即开小差。					
3	在课堂讨论时，我认识到我的陈述是怎样影响到他/她人的感受。					
4	在课堂上当我对某个问题有疑惑，要求澄清时，我相信同学们或许也同样需要问题得到澄清。					
5	我关注的是学习课程的内容而非分数。					
序号	**量表项目**	**非常不同意**	**不同意**	**中立**	**同意**	**非常同意**
6	我对于那些与我相反的观点持开放的态度。					
7	即使分数比我预期的要低，在学术上，我对自己的未来是自信的。					
8	每个学期我都把课程作业作为学术重点来考虑。					
9	在和同学们的合作中，我欢迎建设性的反馈。					
10	我接受我犯的错误。					
序号	**量表项目**	**非常不同意**	**不同意**	**中立**	**同意**	**非常同意**
11	课程结束后，我发现我很容易记住我所学的东西					
12	当同学们需要我帮助解决具有挑战性的作业时，我能够支持他/她们					
13	当我不能理解初次接触的新事物时，我会耐心地尝试着去理解。					
14	我带着好奇和开放的态度学习我的课程。					
15	同学们进行课堂展示时，我表现出支持他/她们的态度。					

序号	量表项目	非常不同意	不同意	中立	同意	非常同意
16	当我对课程材料不理解，感到挣扎时，我会提醒自己其他同学或许也在经历着相同的感受。					
17	当遇到具有挑战性的课程材料时我试图平衡自己的情绪。					
18	参加课程讨论时我意识到自己的偏见。					
19	即使当我的一门课程的作业做得没有其他同学们好时，我仍然对我的这门课程取得好成绩充满希望。					
20	我能集中精力关注我 当下的学期任务，而不去担心未来的学术经历。					
序号	**量表项目**	**非常不同意**	**不同意**	**中立**	**同意**	**非常同意**
21	在课堂中我重视讲课教师的非语言行为。					
22	在我的学术旅途中我专注于过去积极的学术经历。					
23	我能够专注于我当下的课程作业而不去过度关注于毕业问题。					
24	当我倾听同学们表述时，我提问以便更好地理解他们的观点。					
25	我关心我受到的教育如何能为公共利益做贡献。					
序号	**量表项目**	**非常不同意**	**不同意**	**中立**	**同意**	**非常同意**
26	在阅读指定的课程材料时，我能做到不分心。					
27	在课堂上，我能专心学习即使我对课程内容不感兴趣。					
28	当我尝试着学习一门难学的科目时，我会对自己比较耐心。					
29	我能够一次专注于一项学术任务。					
30	如果在课堂上被点名要求说出刚才老师讲了些什么，我可以重复老师讲课的最后一句话。					

Appendix G

Educational Stress Scale for Adolescents (ESSA)

Sun, J., Dunne, M. P., Hou, X.-y., & Xu, A.-q. (2011). Educational Stress Scale for Adolescents: Development, Validity, and Reliability With Chinese Students. Journal of Psychoeducational Assessment, 29(6), 534–546. http://doi.org/10.1177/0734282910394976

Instruction: The following statements are about your feelings and attitudes towards your academic achievement and study. For each statement please select the level of agreement that suits you the best.

		Strongly disagree	Disagree	Neither agree nor	Agree	Strongly agree
1)	I am very dissatisfied with my academic grades	1	2	3	4	5
2)	I feel that there is too much school work	1	2	3	4	5
3)	I feel there is too much homework	1	2	3	4	5
4)	Future education and employment bring me a lot of academic pressure	1	2	3	4	5
5)	My parents care about my academic grades too much which brings me a lot of pressure	1	2	3	4	5
6)	I feel a lot of pressure in my daily studying	1	2	3	4	5
7)	I feel that there are too many tests /exams in the school	1	2	3	4	5
8)	Academic grade is very important to my future and even can determine my whole life	1	2	3	4	5
9)	I feel that I have disappointed my parents when my test/exam results are poor	1	2	3	4	5
10)	I feel that I have disappointed my teacher when my test/exam results are not ideal	1	2	3	4	5
11)	There is too much competition among classmates which brings me a lot of academic pressure	1	2	3	4	5
12)	I always lack confidence with my academic scores	1	2	3	4	5
13)	It is very difficult for me to concentrate during classes	1	2	3	4	5
14)	I feel stressed when I do not live up to my own standards.	1	2	3	4	5
15)	When I fail to live up to my own expectations, I feel I am not good enough.	1	2	3	4	5
16)	I usually cannot sleep because of worry when I cannot meet the goals I set for myself.	1	2	3	4	5

Appendix H

The Chinese Version of Educational Stress Scale for Adolescents (ESSA)

青少年学习压力量表

以下陈述涉及你近期对学习和学习成绩的看法和态度，请根据你在过去 12 个月以来的经验和感受，选择最适合你的答案。

	绝对同意	有些同意	既不同意也不反对	有些反对	绝对反对
1）我对自己的学习成绩非常不满意	1	2	3	4	5
2）我觉得学校里的学习任务太重	1	2	3	4	5
3）我觉得课后作业太多	1	2	3	4	5
4）将来的升学和就业带给我很大的学习压力	1	2	3	4	5
5）父母对我的学习成绩太关注，让我压力很大	1	2	3	4	5
6）我感到日常学习上有很大压力	1	2	3	4	5
7）我觉得学校里的考试和测验太多	1	2	3	4	5
8）学习成绩对我将来非常重要，甚至决定我的一生	1	2	3	4	5
9）如果考试不理想，我觉得对不起父母	1	2	3	4	5
10）如果不能取得理想的成绩，我会感觉对不起老师	1	2	3	4	5
11）同学之间的竞争太激烈，带给我很大的学习压力	1	2	3	4	5
12）我对自己的学习成绩缺乏信心	1	2	3	4	5
13）我在上课时很难集中注意力	1	2	3	4	5
14) 当我达不到自己的要求时，我会感到很消沉。	1	2	3	4	5
15) 当我达不到自己的要求时，我觉得自己不够努力。	1	2	3	4	5
16) 当我不能实现我为自己设立的目标时，我通常会担心得睡不着觉。	1	2	3	4	5